THE LANCET.

VOL. I.] LONDON, SATURDAY, DECEMBER 1. [1827-8.

LECTURES

ON THE

THEORY AND PRACTICE OF MIDWIFERY,

DELIVERED AT GUY'S HOSPITAL BY

DR. JAMES BLUNDELL.

LECTURE VIII.

Of the Softer Parts in connexion with the Pelvis, and the Effects that are produced on them by the Passage of the Child.

WITH the pelvis, Gentlemen, various softer parts are connected, some of them lying externally, others contained within; and these softer parts we purpose now to consider, so far, and so far only, as they are interesting to the accoucheur, commencing with an organ of no small importance, I mean the

Gravid Uterus.—If we examine the uterus while yet unimpregnated, we find its bulk in different women, like that of the fœtus, various,—large however, on an average, as a small pear; and it lies in the middle of the pelvis with its fundus forwards, its mouth backwards, its anterior surface directed somewhat downwards, and its posterior surface above. But making our observations on the womb, in the end of pregnancy, when it becomes a most important study, we find it very bulky, as large, for example, as the adult head, or larger, as the fine casts now before you so well demonstrate. When thus enlarged by gestation, the uterus occupies about two-thirds of the abdominal cavity, (observe the casts,) still placed in the same bearings as the unimpregnated womb, the mouth of it lying downwards and backwards toward the sacrum, the fundus pushing forward beyond the xiphoid cartilage, the posterior surface still facing somewhat upwards, the anterior surface below. The abdominal muscles are spread out before it, the intestines lodge above and behind it, and the bladder, which contracting retires behind the symphysis pubis, when dilated becomes interposed between the abdominal coverings and this viscus, where, in labour, its form and fluctuation may sometimes be distinctly felt. All this, never to be forgotten by the accoucheur, is finely demonstrated in the casts now exhibited.

On laying open the uterus, we find within its cavity the egg of the human species, consisting of a full-grown fœtus, an aquatic animal, immersed in water therefore, and contained in the membranous bag which I here show you. Adhering to the bag or cyst is a large fleshy mass, about twice the size of a small breast; and this connected with the fœtus by means of the umbilical chord, adheres by its convex lobular surface to the upper part of the uterine cavity, and constitutes that part so important to the accoucheur, I mean the *placenta*. But to illustrate: you see, Gentlemen, the placenta in the preparation I now show you; it is small in this specimen, for in different ova it varies considerably. The preparation here exhibited, demonstrates the ovum in the full-grown uterus, and in this preparation you may observe the membranous cyst, the placenta, the fœtus, the chord, and the position in which the fœtus ordinarily lies. In the first stage of our existence, we are placed with the head depending, this being the ordinary position of the fœtus, as that of the adult is converse.

Bladder.—Closely connected with the *vagina* and *uterus*, and not to be overlooked by the accoucheur, is the *bladder*, a musculo-membranous receptacle of ever-varying capacity. Contracted, it contains scarcely a *drachm* of urine; dilated to its full dimensions under urinary obstruction, it becomes capable of containing from *one* to *two gallons*, not, however, without risk of laceration. With the bulk of the bladder, its *situation* is of importance; when dilated, it lodges extensively between the abdominal coverings and the uterus, as before hinted; when contracted, it occupies but a small space, and then lies concealed, in a great measure, behind the *symphysis* in front; much exposed to pressure of course, during the transmission of the head, more especially when the

pelvis is small, or the cranium is unusually bulky.

The situation of the bladder in its contracted state, is well demonstrated in the preparation now in my hand, exhibiting the softer parts of the pelvis in a dried state. By means of it you may learn the position which the parts take when a woman is erect; the symphysis pubis lying downwards, the sacrum above the womb intermediately, and the bladder lodging between the womb and symphysis pubis, liable to be pressed during the passage of the head through the pelvis.

Ureters.—Into the neck of the bladder, on the back part, the ureters open towards the lower part of it, and the sides; in a situation best learnt from your own dissections. The urethra, arising near the lower point of the bladder in front, in length about two inches, is lying on the back part of the symphysis, where it may be readily felt, and traced by the finger,—its roundness and firmness reminding one of a piece of lay-cord; a comparison which I use, because, though coarse, it may be readily understood. At the point or key of the pubic arch, the orifice of the urethra opens, of various capacity: when large, it may admit the little finger; when contracted, it may exclude a sound; when of ordinary dimensions, it readily receives the catheter. To find the orifice, is no difficult task; placing the finger as I now do, in the arch of the pubes, and stirring it a little, you may discover the aperture there: though not always with equal facility, yet with the same certainty, as with closed eyes you might by the touch detect an aperture in a piece of moistened skin. Of course, during the transmission of the child through the pelvis, especially if the head be large, or the pelvis small, the urethra is more or less subjected to compression; it may be closed, therefore, or it may be pushed out of its place and distorted; or under contusion, it may become inflamed, swelled, or spasmodically contracted; nor are these and other effects of compression to be forgotten by the accoucheur.

Rectum.—On the surface of the pelvis, behind, lies a musculo-membranous receptacle of very different form from the preceding, not without its obstetric interest,—I mean the *rectum*, or lower end of the great intestine, which rests upon the sacrum, one extremity of it opening at the anus, the other into the *sigmoid flexure* of the *colon*, to the left of the sacrum. Lying in the hollow of this bone, the rectum is placed a little obliquely, as this preparation shows,—a nicety of anatomy, to be remembered by the surgeon as well as the accoucheur, when examination by the bougie, or any other instrument, becomes requisite. Of the rectum, the lower portion is formed merely by the mucous membrane, the muscular fibres, and a little cellular web; the upper half, or I may say, two-thirds above, being covered by peritoneum in front, and in front only, for the back part lies directly in the hollow of the sacrum, a cellular web being alone interposed there. The superior extremity of the rectum opens into the sigmoid flexure of the colon; the inferior, opening at the anus, is surrounded by a broad muscle, called the *sphincter*, of various breadth, thickness, and strength, in different bodies.—During a mismanaged labour, the sphincter ani is sometimes torn, the retentive power of the gut being lost, at least for a time, not without great discomfort and vexation of the patient, who is excluded by this infirmity from the social circle.

Vagina.—In the middle of the pelvis, and in the course of the axis (demonstrated, as you may remember, in a former lecture) the vagina of the woman is situated, a part which next deserves our attention. Originating all round from the neck of the womb, just above the mouth, which projects into it, the vagina terminates at its inferior extremity upon the genital fissure or *vulva*. This canal, from three to five inches or more in length, though various in capacity, may be capable of containing, on an average, two or three fluid ounces, being well represented in the preparation which I now send round, correspondent with the male organ, in relation to which it was evidently constructed.

Placed in the axis of the pelvis, we find the vagina lies with its back on the rectum, its front on the bladder and the urethra, the upper portion being on the neck of the bladder, and the lower upon the urethra; so that laceration, or slough of the vagina, may lay open either the bladder or the rectum, as these preparations show.

External Organs.—In connexion with the pelvis, we meet also with the external organs, as they are called, of which, in relation to delivery, we may observe, that they constitute a sort of *fissure*, properly enough denominated the *genital*; the sides of which are formed by doublings of skin of various bulk, containing more or less adipose matter, and forming what are called the labia pudendi. Above the fissure, the mons veneris rises, an eminence covered with capillary growth, a protection during the intercourse; below, between the fleshy swelling of the lower portion of the nates, the perineum lies, extending from the genital fissure to the extremity of the rectum, consisting externally of the common integuments, and of the posterior portion of the vagina within, with a little interposed cellular web, and perhaps a few of the sphincter fibres; the whole structure spreading by continuity to the internal and adja-

cent parts, and forming the front of the rectum, a part of the intestine which sometimes stretches forth when the head emerges, and gives for the time additional extent to this important structure. Into the composition of the vulva other parts are entering, but the knowledge of these alone, the labia pudendi, the mons veneris, and the perineum, is necessary to the comprehension and management of the close of the delivery.

Blood-vessels.—In the pelvis, further, and connected with the softer parts, we meet with blood-vessels, not to be passed in total silence, consisting of the *internal* and *external iliacs*. The external veins and arteries lying upon the sides of the false pelvis, beneath the outer margins of the psoæ muscles, while the internal iliacs, spreading over a wider surface, are deposited like my fingers on the sacro-iliac synchondrosis, in the vicinity of which their pulsations may be sometimes felt.

Absorbents and Glands.—Accompanying the blood-vessels, as is usual, we have lymphatics and their glands, and there are some *lymphatics* with their conglobates accompanying the external iliac, and others the internal system of vessels. Into a minute consideration of the pelvic lymphatics, I am not prepared to enter, for they are not of much obstetric importance. I may observe, however, that on the loins and the back of the vagina, glands are seated, which, swelling sometimes, may become as large as the pullet's egg, though rarely obstructing parturition.

Nerves.—In your obstetric studies, the pelvic nerves are not to be forgotten; the *anterior crural*, the *great sciatic*, and the *obturator*, being of capital importance. The anterior crural nerve arising from the first, second, third, and fourth lumbar, (I speak from recollection,) lodging as it passes through the true pelvis under the outer edge of the *psoas muscle* on either side, preserved from direct uterine pressure by the interposition of this muscle, in conjunction with the fleshy mass, is, however, obnoxious to compression, when the womb is large and ponderous. Originating from the second, third, and fourth lumbar, the trunk of the obturator nerve is found in the sides of the true pelvis, lying, as it were, on the denuded bone, perforating the upper and posterior portion of the obturator ligament, and when the head is large, the pelvis small, or instruments are used, it is susceptible of much injury, as this apparatus shows. The branches of the great sciatic trunk, formed ultimately by coalition of the lower lumbar and the upper sacral nerves, are situated principally in the region of the synchondrosis; during the passage of the cranium, when room is deficient, these origins of the nerves lying on the sacro-iliac synchondrosis, must be more or less exposed to the compression here demonstrated from instruments or the head.

Muscles.—Muscles there are in the pelvis too, which, as well as the nervous system, require a notice from the obstetric student,—the *psoæ*, the *iliaci*, the *obturatores*, the *internal pyriformes*, the *levatores ani*, being the principal. Into the anatomy of these muscles, however, I forbear to enter, as I am not prepared with an opportunity of demonstrating them in the recent subject, and a mere verbal description would be dry and unavailing: to my distinguished and able colleague, therefore, Mr. Bransby Cooper, I must refer you for a full demonstration of these parts; and I advise you, by all means, in concluding your anatomical studies, to make them the subject of particular notice, as you will find the knowledge of them not without its interest to the surgeon, and still more important to the scientific accoucheur.

Cellular Web.—Connecting these parts, and lying internally, we have a cellular tissue, which has its claim on your attention, as it invests those parts not covered by peritoneum, and sometimes becomes the seat of inflammation, and more rarely of a fatal suppuration. To this I may add, that by the peritoneum, the pelvic viscera are partially invested, the membrane detaching itself from the abdominal muscles below, covering the body of the urinary bladder posteriorly, lining the upper part of the uterus in front, spreading over the whole of the womb, and perhaps two-thirds of the vagina posteriorly, reflecting afterwards, so as to double upon itself, and extend over the rectum in front, and generally over the back of the pelvis. Under this distribution, therefore, in the human body, the whole of the cervix vesicæ, with the front of the body, the whole of the vagina in front, with the lower portion of the uterus, a small portion of the vagina behind, and the whole corresponding portion of the rectum below, together with the whole posterior part of this organ where it rests upon the sacrum, receives no investment from this abdominal membrane, these surfaces being clothed solely by a cellular web, subject to inflammation and suppuration, as before stated. Before, Gentlemen, we quit this subject altogether, there are a few other points of anatomy on which it may not be amiss to remark.

From the front of the uterus, at the extremities of the curve which bounds the fundus, the round ligaments originate, passing downwards and forwards, to issue at the abdominal rings, externally to which, beneath the common integuments, they terminate. Small in the unimpregnated genitals, they become developed by gestation,

lengthening, spreading, and exhibiting the marks of muscularity. Between the womb and the pelvis laterally, the broad ligaments are interposed, formed by the extension of the peritoneal covering of the uterus (anteriorly and behind) from the sides of the womb to the sides of the pelvis. Posterior to these ligaments it is that the ovaries are lodging, the penetralia of the human species, while the Fallopian tubes, which convey the eggs from this mysterious adytum to the uterus, are stretching along the upper edge of the broad ligament. The uterus, enlarged in the latter months, is pushing between the folds of these ligaments, which, rising with its fundus, spread over the womb laterally, in front and behind, in consequence of which, the tubes are found to take their place upon the sides, along which they lie, the ovaries also being scarcely detached from the contact of the uterus. The cervix of the bladder is spread over the front and upper portion of the vagina, cellular web alone being interposed; so that if an examination be required in front, it may be easily accomplished by laying the finger in front on the upper portion of the vagina.

With this explanation I will send you round the illustrative preparations. That which I here exhibit, consists of one half of the pelvis of a child, and shows many of the viscera *in situ*. The sacrum, the symphysis pubis, the bladder, the vagina, the rectum, and parts connected, may all be seen, the whole forming a preparation which, if you mean to be obstetric practitioners, I should recommend you to make for yourselves, as I have found its use in my own practice. Here is another, a very useful preparation too, containing all the viscera of the pelvis, important to the accoucheur. You have the genital fissure and all its parts; the bladder, with its canals, the uterus, the vagina, the broad ligament, the round ligaments, the ovaries, the rectum. The distribution of the peritoneum is also well enough shown in it, as well as that long loose cellular web, which has such a propensity to inflammation. The preparation here exhibited, shows the various nerves of the pelvis. Here, likewise, is a specimen of the adult vagina.

When parturition occurs, effects are more or less liable to be produced in the various parts which I have been enumerating, and it may be right, before we dismiss the consideration of the softer structures, that we should enumerate and explain to you some of those effects which are the most important. When delivery occurs, there is an extensive dilatation of these parts: the *os uteri*, when contracted, will scarcely admit the catheter, but when dilated, it becomes so widely expanded, as to allow the passage of the head, and this too with facility. The *vagina*, as seen in this preparation, small in its capacity, relaxes itself gently and softly under the pressure of the cranium, so as to sustain the transmission without injury, while a further softening prepares the genital fissure in such manner as to fit it for the emersion of the head. You may set down, therefore, among the effects of parturition, the softening and relaxation of the genitals, the expansion of the os uteri, the opening of the vagina, the dilatation of the genital fissure, not to mention the yielding of the *levatores ani*; for the vagina passing through this muscle, of course it must yield when the head passes.

Where the parts are yielding as they ought to be, and where the first impregnation is effected at an early age, as nature intended, contusions and lacerations are rarely found to occur; but if it so happen from the customs observed in society, or from any other cause, that the first impregnation is too long delayed, then such rigidity may subsist, that, if the head be large, the pelvis small, the efforts vehement, or the accoucheur officious, lacerations and contusions of the most formidable kind may be produced. Sometimes the body of the uterus, more frequently the neck, is torn. Sometimes we have lacerations of the vagina, or lacerations of the perineum, or lacerations of the back part of the cervix of the bladder, laying this part open into the vagina in a way you may readily conceive, from observing the situation of the bladder with respect to the vagina, in the dried preparation already circulated. These lacerations, as observed before, may be produced in various ways:—by the needless introduction of a rude and ignorant hand, by the officious and rough insertion of the lever or the forceps, or, when these instruments have been already introduced, by the too rapid abstraction of the head. The head is secured, the womb is acting, cheerily the accoucheur advances with the labouring, comforting himself with the expectation of a speedy emersion of the child; when, in evil moment, forgetful of the perineum, he ruptures it from end to end, and cripples his patient for the remainder of her days. Spontaneously, or without much interference on the part of the practitioner, lacerations of the genitals may occur; the parts are rigid, the pains are vehement, the practitioner is absent, or the woman starting from her position and losing his protection, the perineum yields, and suddenly the child's head bursts into the world. Against this accident you should always be prepared; but in candour it must be confessed, that laceration may occur, when little blame can be attached to the accoucheur. Add to this, that the back part of the neck of the bladder may be easily torn, in a way which

a little attention on your part may readily prevent. Suppose, for example, the bladder to be charged with urine to the amount of one or two pints—suppose, further, that the child's head passing the pelvis and bearing on the symphysis pubis, divides the bladder into two parts or chambers, one portion lying above the brim, the other portion below, before and beneath the head, in the position of my handkerchief, so that it receives during transmission the full pressure of the cranium; under these circumstances, should the fœtus descend rapidly while the bladder is loaded, disruption of the cervix will pretty certainly occur.

During parturition, it happens sometimes that inflammations and suppurations of all the viscera within the pelvis are produced. When the pelvis is small, the head large, and the labour difficult, all the pelvic viscera are liable to be contused, the vagina especially. Indeed, the violence of labour considered, it really appears surprising, that inflammation of these viscera does not more frequently occur; but the Creator has wisely adapted those parts to the force they are destined to sustain. The neck of the bladder, however, with the urethra, the rectum, and the parts adjacent, are all obnoxious to inflammation, to which the cellular web, already mentioned, is particularly exposed, matter sometimes accumulating in consequence, to the amount of six or eight ounces. A frequent pulse, a foul tongue, a heated surface, a general irritability of the system, a tenderness of the parts in the vicinity of the symphysis felt, on compression, or from jarring the viscera, by striking or giving concussion to the pelvis; these are the leading characteristics by which their condition may be known. Where matter is collected, *hectic* occurs: you may have shiverings, sweatings, vomitings, purgings, wastings, and the patient may be carried off in the course of a few days; or if she be of more vigorous constitution, and in a purer atmosphere, the abscess may open and discharge its contents either into the rectum, vagina, or, perhaps, the bladder itself. In one of the last cases of suppuration brought under my notice, the patient recovering, a good deal of matter came away, apparently from the urethra, along with the urine, and I have a strong persuasion that, in this instance, the pus and urine were mingled in the cavity of the bladder, into which the abscess was presumed to open.

These inflammations and suppurations may sometimes be the result of your mismanagement, and, of course, must fix no pleasing reflections on the mind. If you have been examining the woman too often; if you have been sillily thrusting your hand into the vagina when there was no need; if you have been pragmatically using the lever or the forceps, and if it so happen that the woman be of phlogistic habit, though you use but little force you may contuse, you may lacerate, you may destroy: and sometimes, without any blame to be attached to the accoucheur, when the head is large and the pelvis small, you have laceration, and all the consequence of compression, more especially if the delivery have been too long delayed—not to add that in the anomalies of labour, notwithstanding the best management, these accidents may now and then occur.

You will sometimes find, (nor must this effect of labour be forgotten,) that under the pressure of the head, *sloughs* of the softer parts will take place, and of the more extensive kind too. The inner surface of the perineum may slough, or the labia pudendi, on either side; and what is more to be dreaded, the sloughs may occur in the upper part of the vagina, by which the canal may be laid open into the rectum on the one hand, or into the bladder on the other.

By a rude midwifery, those sloughs may be occasioned. If the accoucheur have needlessly thrust his hand into the vagina, if he have been *foolishly*, (for that is the proper term,) foolishly distrusting the natural efforts, and if, reversing the motto, he have been drawing down instrumentally, *vi, non arte*, instead of *arte, non vi*, he may bruise the parts, so as to produce the sloughs. Sloughs, too, no doubt, may be occasioned by the spontaneous pressure of the child's head; and I have been called to such cases, where little violence has been used. The child's head may be pushed into the cavity of the pelvis, remaining impacted there, so as neither to advance nor recede, this constituting what is called the *incarceration* of the head. When the head is incarcerated, if the pelvis be somewhat large, or the cranium rather small, it sometimes comes away spontaneously; but if the pelvis be small, and the head be large, the cranium may become firmly impacted between the front and back of the pelvis, and sloughs may be the consequence of long continued and forcible compression. To prevent these accidents, when the head is incarcerated you ought to attend to the state of the *pulse*; and if you find the pulse rising, and approaching 130 in the minute, you have reason to suppose that mischief is doing, and that a destructive pressure may exist; while a continuance of the pulse at the natural level, is a pretty certain proof that the parts are not subjected to dangerous compression. When, too, the head is incarcerated, you may make your observations on the degree of pressure; and if the urine flow, and the urethra admit the catheter, and the finger may be passed between the cranium and the symphysis pubis,

the probability of slough is small; but the danger of slough is imminent, if the fingers and the catheter cannot be passed up, and the flow of the urine along the urethra be suppressed. In general, when the head is impacted in the pelvis, neither advancing nor receding, it is unwise to let it remain there more than five or six hours; but if the compression is slight, and the pulse is infrequent, this term may be prolonged, and it must be abbreviated if the converse symptoms are observed.

There is yet one other mode in which sloughs may be occasioned, and that is in consequence of the detention of the head above the brim. When the pelvis is contracted, and the head is large, and the pains are vehement, the cranium detained above the brim is forcibly pushed upon the bones by every effort of the uterus, and in consequence of those repeated descents upon the bones, at last such bruising takes place as ocasions sloughs of the bladder and higher parts of the rectum. But in your patients these sloughs will rarely occur, if you adhere to the general rule already recited, *ad tædium usque*. If there be no dangerous symptoms, and the woman have not been in labour for twenty four hours after the discharge of the liquor, try the natural powers; if dangerous symptoms appear, referrible to the protraction of the delivery, or if the woman have been in strong labour for twenty-four hours after the discharge of the liquor, the head making no advances, try the lever or the forceps; and if the lever and forceps fail, and dangerous symptoms demand delivery; or if the pains have continued without effect for forty-eight hours after the amnial gush, you may have recourse to the perforator. Above all other symptoms, mark the pulse, counting it by the watch with your nicest care; so long as the pulse between the pains remains under a hundred, there is no danger of sloughing; and whenever the pulse mounts above this level, approaching 130, you are to be vigilantly on your guard.

So then these sloughs may be occasioned, not merely by thrusting up the hand, or by thrusting up obstetric instruments rudely, or by suffering the head to remain incarcerated among the bones of the pelvis, but, moreover, by allowing the head, when detained above the brim, to be too frequently and forcibly pushed down upon the bones; and knowing in this manner the more frequent causes of those sloughings, you will readily know, also, the most probable means of preventing them.

Among the effects produced on the softer parts under parturition, when labour commences, a frequent desire to pass water deserves your notice, resulting, I suppose, in part, from *pressure* of the child's head on the *neck* of the *bladder*, and partly from *irritation*. In more laborious labours too, you sometimes find that the bladder is shut, so that neither the urine nor the catheter can be passed, this closure being occasioned, partly by the *pressure* of the child's head on the urethra, and in part, by its becoming displaced and distorted. Now, accumulation in the bladder is always to be deprecated; by it, lacerations of the body or neck of the organ, may be produced in the manner already explained. When the urine is collected, it is not always in our power to introduce the catheter, even though the head be a little repelled; in order, therefore, to prevent the accumulation, as much as may be, the patient should be directed to pass the water while she retains the power; to drink but sparingly, and, in preference, to use those warmer drinks which tend to increase perspiration.

Incontinence of urine is sometimes observed, arising from various causes; by much pressure of the cervix of the bladder it may be produced, independently of dissolved continuity, in consequence of mere weakness, the retentive powers returning spontaneously in the slighter cases in the course of two or three weeks. When the injury is more serious, the debility remaining for weeks or months afterwards, perhaps for years, it is said that a *blister* on the lower part of the back will do good, and this may be tried. Incontinence of urine, too, results occasionally from *rupture* of the neck of the bladder, torn open during delivery, in the way before demonstrated. In cases of this kind, after the delivery, let a catheter be inserted into the bladder, and kept there; and let a *sheep's bladder*, or any other contrivance you please, be connected with the under extremity of the catheter, so as to receive the urine. Keep the parts quiet, improve as much as may be the general health of the patient, and you will now and then have the satisfaction to find, that these rents which were large enough to admit two or three of the fingers, become closed up.

A woman in this neighbourhood having been delivered with much force by the use of the lever, I found, on examining her with great care a few days afterwards, that there was a rent in the neck of the bladder, so spacious, that two fingers passed into it without difficulty, and of course no doubt remained as to the nature of the accident. As this case was ushered into a court of judicature, and a subpœna had been served, in order that I might give evidence with greater certainty respecting the state of the parts I instituted another and very careful examination, some few weeks after the former, when I had the satisfaction to find, that under the use of the catheter, and the improvement of the general health, the wound

was closed so completely that not even the vestige of a cicatrix was clearly distinguishable; nor must I omit to add, that it was to the skill of my able friend, Mr. Gaitskell, of Rotherhithe, that the cure was to be attributed.

Incontinence of urine may also be produced in consequence of sloughing. A week or two after delivery, there come away from the vagina pieces of membranaceous aspect, and of blackish grey tint, forming in the neck of the bladder smaller or larger apertures, which, when they are capacious, are, I suspect, never closed; for in these cases there is not, as in the former, a mere solution of continuity, but a loss of substance. On the treatment of these sloughy apertures, I may hereafter make a few remarks; but it may not be amiss to observe here, that the way of preventing them, is to prevent the sloughs, by adhering to those rules which have been already prescribed.

When the head passes the pelvis, the nerves may be compressed, more especially if the cranium be large, or the pelvis small, or the lever or the forceps be employed, the trunk of the obturator and the origins of the sciatis being the nerves of the pelvis which are most exposed. Numbness and spasms of the lower limbs occur when the head enters the pelvis; perhaps the patient exclaims, "I've the cramp," and relief may be obtained by friction and compression of the affected part. After parturition, in general but little inconvenience is felt, yet now and then torpor and debility remain for months subsequently, and more rarely the patient is quite lame; but I once had a patient, a hawker, accustomed before delivery to pedestrian exertion, walking 10 or 15 miles daily, who, for some few days after parturition, could scarcely cross her chamber, yet in the course of a few months she recovered in great measure the power of the member. Kosciuskow, the celebrated Polish general, who, I think, fought the last battle for the independence of his unhappy country, sustained a division of the trunk of the sciatic nerve from the thrust of a Russian bayonet, and remained lame for some years afterwards, recovering, however, ultimately, (if I am rightly informed,) the use of the limb, and exhibiting in his own person a striking proof of the restorative power of these parts. When the nerves are injured, therefore, recovery, though tardy, may be expected. If severe cramps are produced by instruments, it is better to lay them aside. Cramps appear to be occasioned by the entrance of the head into the pelvic cavity, and when resulting from pressure, therefore, are prognostics of approaching delivery.

By the bearing of the cranium on the rectum and perineum, tenesmus is produced, an accident worthy of a transient and cautionary remark. Moved by feelings of delicacy, the patient may request her attendant to quit the bed side; but he must beware of being misled by her solicitations. It is when the head is pushing through the outlet that this sensation is most troublesome, and were the accoucheur to quit his post at this moment, the head suddenly emerging when the perineum was unsupported, a dreadful laceration of this part might, perhaps occur.

I shall now send you round a few illustrative preparations. The preparation here exhibited, is of the perineum, lacerated so as to lay the genital fissure and anus into one aperture, probably occasioned by the rude introduction of the hand, or the rapid emersion of the head. The second preparation I show you, is truly awful, for the term is not misapplied. In it you have a tremendous laceration in front of the vagina, and another behind, probably occasioned by attempts to turn the child. How would you feel if any female of your circle, or in whose fate you felt more than a friendly interest, had been treated in this manner? There is such a thing as an obstetric *rack*; and the obstetric rack is formed by ignorance and presumption, and in conjunction with violence, the offspring of the other two. Here is another laceration of the uterus, merely without the vagina. When using the hand or obstetric instruments, let the fear of such preparations as these be always before your eyes. A rupture of the bladder, occasioned by accumulation of the urine I here show you. The accident is rare, but deserves your attention.

When we meet again, I shall proceed to the consideration of the labours.

LECTURES

ON THE

INTELLECTUAL COMPOSITION OF MAN,

Delivered at the London Medical Society by

DR. HASLAM.

Lecture VI.

On the Origin and Nature of the Passions.

It has been attempted in the preceding Lectures to describe the intellectual composition of man, during the long period of his advancement from infancy to mature age; and to point out the circumstances that contribute to the formation of his mind. The connexion of mind with body, in all the stages of human existence, was the position

from which we started, and such principle has been undeviatingly maintained throughout the course of these investigations: but it has never been assumed, that mind and body will be mutually and equally progressive. Our observation and experience are opposed to any such conclusion. In a healthy atmosphere, with proper exercise and nutriment, the corporeal frame will vigorously expand from the child to the adult: and deprived of these auxiliaries, the system will be impoverished, and subject to various morbid affections. However ample the intellectual capacities, if their culture be neglected, the subject will be destitute of those rudiments of knowledge, that fit him for the employments of life; and thereby deprived of the means of advancement, and as a moral agent, he will be a disgrace to his species. The ordinary survey of our race will detect abundant instances of puny, deformed, and miserable creatures, possessing the most acute, powerful, and cultivated mind, and the same view will furnish as many examples, where the most perfect bodily symmetry, or gigantic proportions,—where the models of the Apollo Belvidere, or Farnese Hercules, are conjoined with ignorance and stupidity. Before we enter particularly into the examination of the demonstrations of purpose, the force of impressions, and the explosions of feeling, that are termed the passions: before we trace the expressions of desire, the overwhelming shocks of terror, or the bursts of fury; it will facilitate our investigation of this subject, to premise, that if man, as we have described his body and his mind united, were merely an assemblage of perceptions, memory, volition, and thought, superadded to a living system, and wanted the passions common to our species, he would be a passive incumbrance to the earth he inhabits.

A being so constituted, according to the extent of his acquirements, might coldly discuss the subjects of philosophy, morals, and politics; but he could feel no interest in the debate, nor become zealous for superiority. He would be insensible to that "last infirmity of noble minds," ambition; which goads to contention and animates to victory: a conflict, where the search for personal aggrandisement enlarges the sphere of knowledge, and by its diffusion, contributes to benefit mankind; nor could he be inspired to exert those generous energies, that wield eloquence in the cause of freedom. In this state of apathy, the glad tidings of success would fail to delight him, and he would be equally callous to his own misfortunes, and to the miseries of others. This alien to joy and sorrow would likewise be a stranger to the purity of affection: he might feel the carnal distentions of lust, and seek its nearest gratification: but he would be insensible to those refined feelings that constitute love, and which involve the esteem and protection of the source of his enjoyments, and the moral solicitude for the welfare of his offspring: and wanting the prospective anxieties for his children, he could not revert with gratitude and reverence to his parents. Uninfluenced by the passions of love and ambition, he would be exempt from the jealousy and envy they provoke: and if in the craft of his reflections he contrived mischief, he would lack the courage to perform it. It would be useless further to rack the invention to complete this fabrication of the fancy: the supposition is groundless: for man, wherever he is found, discovers himself to be the inseparable compound of living agency, intellect, and passions. His intellect is indispensable for the play of his passions, and his passions are necessary for the advancement of his intellect. Whatever may be the nature of these passions, the operation of which in our own species, the poet has described, the painter represented, and the actor most forcibly embodied: a very slight degree of observation will convince us, that animals, especially of the higher orders, exhibit unequivocal indications, that their minds are actuated by similar feelings, and under various circumstances urged to their expression, according to their different states of wildness and domestication. These passions seem to be proportionate to their physical construction and natural sagacity: and some well-marked displays may be traced in those of an inferior class. Indeed it seems probable, wherever a glimmering of intellect, which implies the adjunct of volition, is combined with animated fibre, that by certain irritations, some degree of excitement and emotion will result. In animals, the organs most intimately connected with life, and with the continuance of the species, are the great sources of their passions. When pressed by hunger, they evince a boldness and ferocity that are terrific; and when impelled by lust, the rage of gratification is equally conspicuous. The stomach and organs of generation, are the copious springs from whence their passions are derived; and when we come to consider the conduct of man under the same requisitions of appetite, and rampant desire of sexual enjoyment, we shall discover the same principles in operation.

In this inquiry, the fair and rational method of proceeding, will be to trace the rise and progress of the passions, in the same manner that we have investigated the acquirements of the intellect: which is by considering the state of the infant, and observing the circumstances that contribute to their formation. In the next place to

demonstrate, according to the nature of the human race, that these passions are the necessary contingents on our intellectual acquirements: and, finally, to exhibit the passions resulting from that mental elaboration, which has been termed thought or reflection. At the birth of the infant, and for some time subsequent, it cannot be said to possess any passions: but we must recollect that it is alive, and endowed with nerves, the instruments of feeling, and therefore may be the subject of pain. It is exposed to various sources of irritation, both external and internal, and sends forth its cries, which may be interpreted the signals of impatience and distress:—yet these do not amount to the display of any definite passion, which, according to my own views, must originate from intelligence. Passion is the display of intelligent feeling, the outward and visible sign of the internal mental impression. We must, therefore, discriminate between those bodily irritations, which, in the ordinary phrase, render the child cross and fractious; such as arise from tormina of the intestines, eruptive fevers, and difficult dentition: these, with many others, are purely corporeal affections, and ought to be distinguished from the circumstances that evidently excite anger, and impress fear; and presume a knowledge of the object or action that produced the emotion. Passion implies, at least, the previous acquirement of perception of its associate memory, and of a certain degree of volition. Anger is, however, one of the passions of earliest development, and may be excited by a variety of circumstances, after these attainments have been acquired. Every mother, who has afforded nutriment to her infant, must have witnessed the display of impatience with which it seeks her breast, on waking, under the calls of appetite; and of its irascible demonstrations, until it is applied to the nipple, and then becomes impetuous if it be prematurely withdrawn. The same exhibitions of rage are also manifested, if it be attempted to wrest from its grasp any object or toy that it holds, and with which it is delighted. Pleasure and pain appear to be rather corporeal feelings that are evinced by the indications of smiles or screams, than passions properly so termed: especially as the infant is ignorant of their sources: and it requires a more considerable advancement, before these feelings can be elevated to joy or depressed to sorrow. The nervous fabric of the infant is likewise susceptible of the violent agitations that impress terror. When the eyes can competently discern certain objects, and the features of particular persons create alarm, and the same dread is excited by harsh sounds and loud intonations: yet these cannot be said to amount to fear, which implies some knowledge of the cause producing the emotion, which is the apprehension of danger. It is not until the child has made some progress in language, that any considerable number of actual passions are matured:—until the exercise of speech, they may be considered the *ignes fatui* of the soul, that play on the countenance, or start forth in the bursts of pantomimic gesture. The incipient assumptions of pride, that iniquitous comparison with others, in which we uniformly attribute the superiority to ourselves; and jealousy, the sting which our own unworthiness inflicts on the preference of greater merit, are likewise among the first unfoldings of our early years. Such is the complexity of these associates of our nature, these shadows that adhere to our intellectual light: so powerful are the intensities of these passions, so multiplied their hues,—so variously are they blended, and so loosely denominated, that by attenuation they appear as virtues, and become crimes by compression. To number and arrange the catalogue is impossible on the present occasion: they resemble the vices that perplexed the Sybil:—

"Non mihi si linguæ centum sint, oraque centum,
Ferrea vox, omnes scelerum comprendere formas,
Omnia pœnarum percurrere nomina possim."—*Æn.* vi. 625.

We must now proceed to that season of human life, when the animal frame undergoes important changes, and which induce certain mental phenomena that are equally interesting. This is the period of puberty in both sexes; and it is equally marked by the exuberance, vigour, and expansion of the genital organs, and by appropriate desires, feelings, and passions. It is evident that these mental exhibitions are the necessary and contingent results of the organic development; as they were unknown before the procreative apparatus was awakened to its sense of function; and likewise, from our experience, that when the vigour of the organs is extinguished, the attendant passions melt away, "and leave not a rack behind." In some subjects the dawn of these feelings and propensities is premature, and with others there remains a lengthened twilight of pruriency, after the day of effective manhood has declined. When the sexes arrive at a state of ripeness, that enables them to co-operate for the propagation of the species, the toys of childhood are abandoned, and they view with disdain the puerile amusements by which they were formerly delighted. They assume the manner and costume of maturity, and feel an independence that rejects the restraints by

which they had been governed, and too frequently revolt from their obedience to the counsel of their elders. Filial fondness and affection, is commuted for mere respect, and esteem for the parent. They loosen the ties by which they are confined, and become impatient of the hand that trained them: they are indignant at being considered espaliers, and claim the individuality of standards. When the genital organs, that hitherto had been comparatively dormant, become prolific by a new secretion, the other senses contribute their powerful aid, and lend a separate grace to augment the fascination. The eye not only estimates the symmetry of form, and the charms of feature, but officiates as the interpreter of mutual wishes. The ear imbibes the subtile contagion of flattery and devotion, and the magic influence of the touch communicates a thrill that penetrates to the heart, and too frequently subverts both precept and example. This sexual impulse, when properly directed, gives birth to sentiments of delicacy, attachment and esteem, of generosity and honour: but the high appreciation of the jewel that we wish exclusively to wear, when viewed with fondness and pretension by another, inflames us with jealousy, and induces the hostility and suspicion that rivalry promotes: and if the competitor be preferred, we pine under the corrosions of envy, or sink into melancholy and despair. However we may attempt to disguise the passions of love by a protracted prelude, and respectful advances:—by presuming the difficulties of the enterprise, and timidly surmounting the obstacles that imagination oftener creates, than female severity interposes; on an accurate analysis, we shall be aware that these are the delusions that enhance the ultimate surrender, and exalt the enjoyment; for the feeling is intrinsically prurient, and tends to sensuality, however masked by sentiment, polished by eloquence, or restrained by decorum.

"Heu vatum ignaræ mentes! quid vota furentem,
Quid Delubra juvant? est mollis flamma medullas
Interea, et tacitum vivit sub pectore vulnus."

This passion emanates from the corporeal organs, it is maintained during their vigour, and when their energies decline, it is extinguished.

It does not accord with my views on the present occasion, to institute any general inquiries into the nature of the stomach and its diseases: but as connected with human feeling and passion, it is impossible to pass over the affections of mind that are induced by the opposite states of hunger and repletion. Every one is fully aware of the habitude, mental apathy, and stupidity that result from excessive loading of the stomach; and of the inactivity, torpor, and somnolency that ensue. Even the circumscribed intellect of animals is obscured, when they are fattened to excess; and the dainties they then constitute, by overcharging the stomach, will produce a similar dulness of the human faculties. Under certain states of insanity, the patient is averse to food; and sometimes his delusions influence him to starve himself. These are the symptoms of disease. But we have many well attested instances, of persons in health, of mild and amiable dispositions, and belonging to the most civilised communities, who, under the pressure of hunger, have proceeded to devour their comrades, with all the ferocity and enjoyment of savages; where friendship or kindred interposed no barriers to the feast, who have quaffed the warm blood as it flowed from the victim, and regaled on his palpitating members.

"—— atro cum membra fluentia tabo
Manderet, et tepidi tremerent sub dentibus artus."

In these instances we observe the feelings, desires, emotions, and passions that proceed from the organs of generation; the agents by which the species is continued; which are endowed with abundant nerves of exquisite sensation, and the functions of which transport us to a higher æther; and likewise, from the stomach, the great emporium of animal life and nutrition, and remaining source of gratification, when the erotic propensities have subsided. These facts sufficiently demonstrate the intimate alliance, reciprocal interchanges and mutual dependencies that are established between corporeal offices, and the intellectual phenomena that constitute mind;—a conjunction, that no human analysis can separate, and the necessity for which is equally obvious. Could man have continued his existence without the sense of hunger? which, in more courteous phraseology, we term the blessing of appetite; and without the introduction of food into his stomach, he would not have laboured:—his industrious habits, both of mind and body, would be superfluous toil, and he would have passed his life in indolence; not being subject to the requisitions of aliment, he would be a stranger to the gratifications of feeding; the generous hospitalities of life would be unknown, nor could we have felt the sublimest of human delights, in the dispensations of charity, by administering to the wants of others.

As our passions have been shown to be the necessary contingents of our intelligence, and likewise, that some of them are especially promoted by the conditions of import-

ant bodily organs, it will be advantageous, both in a physiological and practical point of view, to note the effects which the operations of these passions produce on the corporeal system; in order to demonstrate their reciprocal actions, and thereby confirm the inseparable conjunction of body and of mind. A sudden burst of indignation, independently of surcharging the head with blood, will frequently produce pain in the region of the stomach, with severe colic, constriction of the biliary ducts, obstinate constipation, and in some instances, jaundice. A violent paroxysm of rage has been known to occasion hemiplegia, apoplexy, and immediate death. The unexpected occurrence of good fortune, produces that excitement and elevation of mental feeling that is denominated joy: sometimes the surprise is so considerable and overwhelming, that the person for a time loses his consciousness, or in other words, has an attack of syncope or faints, and on his restoration, is observed to possess a preternatural activity of mind. Of course these symptoms will vary according to the susceptibility of the person, and the intensity of the emotion; and there are instances recorded of sudden death, apoplectic seizure, phrenitis, and of insanity, resulting from the extreme transports of this passion. In a moderate degree the countenance becomes slightly flushed, the eyes sparkle and assume a peculiar animation, the pulse is quickened and the appetite is increased. There is no difficulty in conceiving the direct operation of a mental stimulus, because there are many circumstances that obviously produce the same effect. We are all aware that wine, alcohol, and opium, administered to the stomach, will, through its medium, confer delightful sensations, excite the mind, and elevate the spirits: in a like manner, the intelligence that conveys to us the advancement of our interests and fortune, the health and prosperity of those who are dear to us, or the victory that has been obtained over our enemies, inspires us with the feeling that is denominated joy. It is true, that hitherto poets and romancers, have been exclusively occupied in the description of these feelings, passions or emotions: but there is still ample space for the labours of the physiologist. Our passions admit of various gradations, and there exists in our language a vast vocabulary that depicts their shades, and characterises their progression: from the incipient dawn to the meridian intensity. To describe the progress of excitement, or elevation of mind:—at first the person is lively, cheerful, gay, glad, vivacious, pleasant, mirthful, jocund, happy, until he becomes elated with joy. But in the augment and succession of these excitements, whether produced immediately by mental operation, or through the medium of fermented materials; he assumes a levity of manner, becomes volatile and frolicsome: his conversation is flighty and extravagant, ultimately he feels transported with ecstacy, and elevated to rapture; while his more temperate associates perceive him to be in the state of actual delirium.

If the mind, the aggregate of perception, memory, will, reason, and thought, with the associated passions ingrafted on a living system, can be directly stimulated by certain excitements: there are other affections, not thoroughly understood, that appear to operate in a manner entirely opposite. Of these, fear may be taken as an instance, the impression of which produces a sudden prostration both of the corporeal and mental energies. There is a feeling as if the blood forsook the extremities, and retreated on the heart; the countenance becomes pale, and the uncovered parts of the body are colder to the touch: the body is likewise motionless, and cannot be urged forward; tremor ensues, the knees shake, and there is a general instability of the frame. In children, the voluntary power and control that secure the sphincters become relaxed, and their contents are evacuated: and if we are not misinformed, the same effect has occasionally been noticed among adults, in situations of imminent peril. The degrees of fear are manifold: and the corporeal and mental effects vary according to its intensity. The circumspection, listening caution, and hesitation, that demonstrate the apprehension of danger, excite the mind to different expedients and contrivances, to escape from the impending evil: the faculties are quickened by the consciousness that disaster is approaching:—but the shock of fear, when the alarm is sudden, and the exciting object terrific, produces that dismay which suspends the ordinary operations of the intellect, and the person becomes overwhelmed with the force of the impression: and the acmé of all those passions that are displayed by immediate impulse, presume a violence of explosion that destroys the regular employment of the mental faculties. It must not be overlooked, that the different passions, in addition to their interior workings, bear external and corporeal characters of their existence and movements. These are denoted by the expressions of the countenance, and by gestures, the natural emblems of feeling. The human face is the luminous index of the mind, the faithful mirror that reflects its secret agencies: gesture is its potent auxiliary, and the avowed expositor of impending emotion. Anterior to the acquirement of speech, the child can only manifest his delight, his pain and displeasure, his desires and aver-

sions, by these natural and emphatic interpreters. The limited nature of this composition does not enable me to analyse the numerous passions that adorn or degrade our species: but the specimen that has been given will form the basis of the investigation, and be extended to the remainder. There are still some corporeal demonstrations of intense feeling, which must not be left unnoticed; blushing, weeping, and laughter. The degrees of red which tinge the skin under certain feelings and emotions, considerably vary; we observe the slight hectic of the moment, that is kindled by pride, and repressed indignation: the delicate suffusion that commendation imparts to modesty, and the crimson flush that indicates ingenuous shame. The physiology would be most interesting if competently understood. This blush is not always confined to the face and bosom, but, in situations of exposure, has sometimes overspread the thighs and abdomen. The temperature of the skin is rendered sensibly warmer, and those who are susceptible of its influence are aware of the visitation, by the intense glow they experience. It may be noticed in children, especially females, about the fifth or sixth year, but it has its most graceful and interesting predominance at the age of puberty. From our intercourse with the world, which gradually unfolds to us many of its secrets, and teaches us to consider the sexual mysteries, as the subjects of natural history; this nervous erubescence progressively wears off: and when female delicacy is prematurely extinguished, this criterion of its existence is no longer observed: yet even in the most profligate and abandoned, there are extraordinary occasions that will summon up the remnants of the tint. If certain mental emotions can suddenly infuse a surcharge of blood into the countenance, of which blushing is an unquestionable example, we shall be enabled to understand that its abstraction may be produced by the impression of fear. Among the senses that convey the silent energies of human passion, the eye claims a distinguished preference. It is unnecessary to enumerate its various offices, but to remark that parts intimately connected with it, furnish a secretion, that has uniformly been regarded with reverence, as the criterion of sorrow and sometimes of joy. At a very early age tears are abundantly shed, and before the feelings they characterise are matured. The child pours them forth under all irritations, threats, and restraints: and whenever his impetuosity is repressed, or his intentions thwarted, conjoins his vocal ejaculations, the whinings of impatience, and blubberings of discontent. These tests of emotion, although most sparingly effused by the dull, are the types of feelings that have been ripened by reflection: and the escape of a solitary tear, bestowed as an oblation to existing affection, or a tribute to departed excellence, adds a lustre to beauty, and confers a dignity on manhood. The remaining and complicated affection is laughter, and its display indicates passions and feelings that have been considered of an opposite nature. Its operation is strikingly depicted in the countenance, its movements are felt in the diaphragm, and it convulses the thorax. It is presumed to be the united mental and corporeal effect that comedy excites: it is not provoked by the brilliant sallies of wit, but is derived from the lower origin of humour, caricature, and buffoonery: it is conceived in the mutilation and disfigurement of human character and manners, and when brought forth, equally distorts the visage by its expression. It is an involuntary spasm, and in hysteria and madness, becomes complicated with morbid affection, without the usual excitement for its production. It is the index of different passions: its mitigated display is a smile, which can convey both approbation and contempt; and its loudest bursts denote either the ecstacies of mirth or the peal of scorn and derision. It has been previously observed, that animals are influenced by certain passions; and that these are essential for their subsistence, for their defence and for the continuance of their species. These feelings and emotions are sudden impulses from immediate excitement, and expire when the appetite is gratified, or the irritation is withdrawn. They can also recollect the object of their aversion or regard, when accident again introduces him to their notice. Man is likewise subject to the sallies of immediate feeling, which circumstances provoke; and these paroxysms commonly subside after a short duration: but man, from the possession of language, is enabled to invest feeling with an enduring record, and by his exclusive faculty of reflection, to contrive the means of accomplishing his purpose, and of maturing the determinations of his will: by reflection he can brood on injury, and exalt the virulence of his resentment.

In the gloomy recesses of his capacious mind, he can revolve the indignity that has wounded his pride, and after the lapse of years, can summon it to his recollection, in all the freshness of a recent infliction. In the pursuit of honourable fame, he can devote his mind to study, and intent on his purposes submit to the privations of enjoyment: and if a member of our own profession, will reconcile the most revolting researches; and even delight in the prosecution of knowledge, where disgust is blended with peril: and if actuated by malignity, he will hunt his enemy with incessant per-

secution, and traverse the larger portion of the habitable earth for the gratification of his revenge. Thus the baser passions, those that display elaborate contrivance for the attainment of the purpose, and are concocted by reflection; are peculiar to the comprehensive intellect of man. But passions, like muscles, have their antagonists, and his nature is equally susceptible of the most dignified and exalted feelings, which animals can never attain. Such is the necessity for the estimates of reason in every thing relating to mind, that the same passion, which in moderation is a commendable virtue, when drawn to its utmost extension, becomes a reproach to human character. A prudent economy may be contracted into parsimony and sordid privation; and a liberal spirit stretched to extravagance and prodigal excess: cautious circumspection may degenerate to unmanly fear, and courage become strained to desperation: love more highly seasoned is expanded to concupiscence: and a generous emulation may swell to inordinate ambition.

It must be evident that the unrestrained indulgence of these passions would constitute man a tyrant, a monster and a lunatic, if some principle did not operate to control them. This mastery may be obtained by reason, and its practical condensation into laws; the energies of which inforce the moral code by penal inflictions. In civilized communities, the human mind is strained by education, progressively adapted to its capacities, and ethics are inculcated in proportion to the advancement of reason: indeed the intemperate sallies of volition that constitute our baser passions, when reason does not subdue them, can only be restrained by the dread of punishment. But even this self control may be carried to a pernicious extent: for nefarious purposes a human being may succeed in masking his designs—by repeated efforts and long practice he may attain a refined diplomacy that can strangle passion in its birth, and obliterate from his countenance all the traces of its expression: he may assume a blank composure, that reveals not the triumph of success, nor displays the index of disaster: he may repress the tear of compassion, and stifle the bursts of honest indignation. To conclude, such are the sinister accomplishments of man, that while he is meditating the arrangements of his revenge, he can summon hypocrisy to bestow a smile on his victim, or assume the garb of friendship to conceal his diabolical malice.

Thus it has been endeavoured to display the mental composition of man: and to blend his vital energies with intelligence and feeling. These humble and imperfect attempts, it is hoped, may be the prelude to more minute investigations, and stimulate some more competent individual to superior attainment: but if I have merely succeeded in convincing you that mind, and all its constituent phenomena appertain to human physiology, I shall receive the purest satisfaction, and a high reward.

[The conclusion of this Lecture was received with the loudest plaudits by a numerous and highly respectable audience.]

LECTURES ON CHEMISTRY,

BY

MR. FARADAY.*

Delivered at the Royal Institution of Great Britain.

Lecture XII.

On Radiant or Imponderable Matter.

Gentlemen,—We now arrive at a description of matter which, inasmuch as it produces different phenomena, must be regarded as differing from every other in its nature; it is of so subtile a nature, as to require very minute and delicate investigation to demonstrate its existence; it cannot be confined nor submitted to the usual modes of examination, and it is known only in a state of motion, as acting upon our senses, or as producing certain changes in the more gross forms of matter. To the substances falling within this general definition, the term *radiant* or *imponderable matter* has been given, which it will be our duty shortly to describe in this and the succeeding lecture. There are three series of phenomena afforded by radiant matter:

1st. As regards those effects by which they are rendered visible, producing the *phenomena of vision.*

2d. We shall have to consider the operation of radiant matter in *producing heat*; and

3d. We shall have to examine its influence in producing *chemical changes*; an influence which is of a very active kind.

As regards the nature of these phenomena, some suppose that they are due to three sorts of rays, whilst others suppose that they are due to the same kind of matter acting in different ways. Huygens and Descartes imagined, that the phenomena

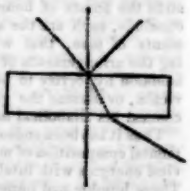
* Messrs. Brande and Faraday are in the habit of lecturing alternately on certain divisions of chemistry; so that the subject treated of by Mr. Brande in the one course, is consigned to Mr. Faraday in the next. Contrary to this general rule, Mr. Faraday lectured on radiant matter in both of the last courses.—Ed. L.

mentioned, arose from vibrations of a rare elastic medium, which fills space, while Newton considered them as resulting from emanations of particles of matter: and these are the two principal opinions which have been started and supported.

The sun is to us the great source of radiant matter, but other agencies may be called into action, by which all three of the effects enumerated may be produced. We may accomplish the combustion of bodies, and thus at once exhibit chemical change, light, and heat: with a Voltaic battery the same results can be obtained, but of course in a less degree.

Light is a matter by which vision is produced, and it is the first to which I shall call your attention, and I am the more anxious to do this, since it will at the same time tend to explain these relations by which matter generally is influenced by electricity; but you must also recollect, that the minute investigation of the laws which relate to the motion of light, and to its effects in producing vision, belongs rather to the mechanical philosopher, being a branch of the science of optics; it is, however, necessary that some of them should be partially considered, as bearing upon important questions of chemical inquiry. Light originates from the sun and other heavenly bodies, and incandescent substances, which are termed inherently luminous; or from the reflection of light from the surfaces of bodies, especially from the reflexion of the sun's rays from the surface of the earth. The course of the rays of light in their radiant form, as they pass from one substance to another, is always rectilineal, and this is evident, if we regard the shadow of a body which will represent the outline of the body interposed between the earth, the source of light. Every such right line drawn from a luminous body, is called a ray of light, and as a congeries of rays possesses the same properties as a single ray, the same term is frequently employed to designate it. The degree of radiation of light is extreme, it having been ascertained by the experiments of Bradley and others, that it is only eight minutes and thirteen seconds passing from the sun to the earth, or at about the rate of 200,000 miles per second; and I mention this to show you the extreme temerity of its nature, that although travelling at such immense velocity, it produces no tangible effect upon the human frame.

When light falls upon bodies, it is observed that there are some substances which allow it to pass through them almost uninterruptedly, as a plate of mica or glass, and that there are others which interrupt its passage and produce a shadow on the opposite side; and there are other bodies, again, which prevent the passage of light only to a certain degree, so that there are gradations from perfect opacity to almost perfect transparency. Generally speaking, opacity does not depend upon the density of bodies, but upon the manner in which the particles of light are transmitted; for it is not very probable that the particles of bodies should be far enough distant to allow of the passage of the light. It was supposed by Newton, that the particles of transparent bodies were of an uniform density and arrangement, and that they suffered the ray of light to pass through them without obstruction, by attracting it equally in every direction; whereas, he supposed, that in opaque bodies, the particles were either of unequal density or irregularly arranged, and that the light, being unequally attracted, could not penetrate through them. When light falls upon an opaque body, it produces phenomena which vary in kind; sometimes the light is immediately absorbed, and in all appearance vanishes, and at other times, when impinging upon a substance, again thrown off and is reflected, as it is called. Now the more regular and uniform the surface of the body on which the light impinges, the more regular is the reflexion, and there are a few circumstances influencing the laws of reflexion which I must explain to you. Suppose, now, that we take a perfectly plane surface, say a disc of polished metallic matter, the light is thrown off in nearly the entire quantity which fell upon it, and the angle at which it passes off, or is reflected, is the same as the angle of incidence. So far does this difference in the angle of incidence occasion a difference in the angle of reflexion, that if you hold a candle directly against a hard board; it does not possess the power of reflecting it, yet if you hold it at a very obtuse angle, a perfect image of the candle will be reflected. With regard to the transmission of light through transparent bodies, although the greater number of rays pass through them, there are some which are always reflected when they fall perpendicularly upon their surfaces, and such rays as fall upon transparent bodies obliquely will pass through them, but will be interrupted in their direction. We shall be better able to show this by referring to a diagram. Let us suppose one part of this diagram to represent a piece of polished glass, a perpendicular ray will pass through it in the direction here drawn, whilst of the oblique ray, one portion will enter the glass and suffer refraction; that is to say, it will be bent toward the perpen-



dicular, and on re-entering the atmosphere, it will be again bent from the perdendicular, as is always the case whenever a ray of light passes from a denser into a rarer medium; whilst another portion of the oblique ray will be reflected at an angle equal to that at which it fell upon the glass, or, in other words, at an angle equal to that of the angle of incidence. The fact of a ray of light being attracted toward a denser body than the medium through which it arrived at it, was adduced by Sir Isaac Newton as one of the proofs of the materiality of light; and the medium in which the rays of light approach nearest to the line perpendicular to its surface, is said to have the greatest refractive density.

The density of bodies, however, is by no means the only circumstance which alters their refractive power, it is also materially affected by their chemical nature; and generally speaking, their substances have the greatest refractive powers, which are combustible, or which contain an inflammable base, and the refractive power of compounds is not the mean of their components. Another proof, as it has been considered by some persons, of the materiality of light, is the phenomena exhibited when light has been examined by the calcareous spar, or iceland spar. If an object be viewed through a piece of spar of this kind, it appears double, you see two objects when there is only one. Now this phenomenon takes place only in certain positions of the spar, and it appears that in such positions of the spar, certain divisions of the rays of light issuing from the object is produced, the fact being, that there is a power in the crystal of separating the rays of light into two, and that in the other direction there is only one, one portion being refracted in the ordinary way, whilst the other suffers extraordinary refraction in a plane parallel to the diagonal, joining the two obtuse angles of the crystal, so that objects seen through the crystal appear double. This *polarisation* of light deserves attention, and without going far into the subject, we may just mention, that the two rays of light which have passed through the spar exhibit peculiar properties, and will be found in very extraordinary states. Now let us endeavour to explain what is meant by the polarisation of light. It has been supposed that the particles of light have assumed, in their passage, a particular position, as a needle does under the influence of the magnet; and this property of light has been diligently investigated by Dr. Brewster, Arago, and Biot. Although it is true that light reflected from bodies retains, under many circumstances, its former relations to the refractive power of the transparent media, yet in other cases it is reflected at angles differing for different substances, the reflected rays exhibiting peculiar properties analagous to those which have suffered extraordinary refraction. (Experiments were then made to show this fact, by throwing the rays of light issuing from a lamp from one mirror to another.) Light passing through crystallised substances loses its polarisation, and if a plate of mica were interposed between the mirrors employed in the experiments which you have just seen, so that the reflected rays might traverse it in passing from one surface to the other, it will be found that, under certain circumstances, the image of the lamp would remain visible, in other words, the light would be depolarised in passing through the crystallised medium. The beautiful phenomena of colours depend upon the polarisation of the rays of light, and although it was known for ages that a sunbeam in passing through a dense medium, and especially through a triangular prism, gave rise to series of brilliant tints, similar to those of the rainbow, yet the cause of the phenomenon was not known until Newton proved that light consisted of rays differing from each other in their relative refrangibilities; and, guided by their colour, he divided these rays into seven in number, red, orange, yellow, green, blue, indigo, and violet. These rays are not farther decomposable by the prism, or by any number of refractions, but when they are collected into a focus they reproduce white light, and upon this phenomena is founded the Newtonian theory of colours, which supposes them to depend upon the absorption of all rays, excepting those of the colour absorbed, red bodies reflecting the red rays and absorbing all the others, and so on. If the colours of the spectrum be divided into 360 parts, the red rays will occupy 45, the orange 27, the yellow 48, the green 60, the blue 60, the indigo 40, and the violet 80. Of these the red rays, being least refrangible, fall nearest to the spot which they would have reached if they had not been refracted; while the violet rays, being the most refrangible, are thrown to the greatest distance.

Now with regard to *artificial heat*, it varies exceedingly in colour, and it is only the light emanating from the sun, which is capable of producing a pure white heat. If a solar beam be refracted by a prism, and the coloured image received upon paper, it will be found that there is an evident increase of temperature toward the red ray, and if the coloured rays be thrown upon delicate thermometers, it will be seen that, if the heating power of the violet rays be considered as equivalent to 16, that of the green rays will be equal to 26, and of the red to 55. The experiments of Mr. Leslie seem to show, that the heating power of the

spectrum extends just beyond the red ray, and that at the point where the red ray terminates the greatest heating power will be found; but I do not consider that this matter has been clearly established. The general laws of refraction apply equally well to heat as to light. Now comes an important point with regard to the proofs of the materiality of this kind of heat. In the former lectures, when we considered heat as a property of matter, we did not speak of *radiant heat*, for so long as heat is radiant, there is no elevation of temperature: thus the glass in a window does not become hot, whilst the board on the inside, from which there is no radiation, becomes quite hot.

Now thus far we have confined our observations to heat as radiating from the sun, but where a terrestrial body is heated, the heat is radiated according to the temperature of the air which surrounds it; and we have again to suppose that all bodies are radiating heat, and that this phenomenon is always going on, and that the celerity of this radiation is in proportion to the temperature of the body. The effect we perceive on approaching a fire results chiefly from the radiation of heat, in which the conducting power of the air is little concerned; and we are indebted to M. Pictet for the best explanation of the radiation of heat. The effects of radiation from terrestrial matter are best exhibited by two concave mirrors of burnished tin or plated copper, placed at about the distance of about ten feet from each other. When a thermometer is in the focus of one of the mirrors, it will be found sensibly affected by a heated body, placed in the focus of the other mirror, and that the effect is produced, not merely by radiation, but by the reflexion of heat, is shown by drawing the thermometer out of the focus toward the opposed mirror, or by placing a screen between the thermometer and its mirror; diminution of temperature being indicated in either case. We must defer the further consideration of the subject to the next lecture.

Lecture XIII.

On Radiant Matter.

Gentlemen,—I have briefly called your attention to certain distinctions between the heat which radiates from the sun and from bodies on the earth; another great distinction is, that the heat which emanates from the sun, passes without any obstruction through glass and other transparent substances, whilst that which radiates from the earth, always loses a large portion of its rays in attempting to pass through such substances, that is to say, they appear to be interrupted or obstructed in passing through the glass, and this depends principally on the source of heat; these rays of heat may be collected into a focus by a lens, and there will be found to be a great difference between heat arising from different substances. There are still other differences between solar and radiant heat; and one of our main points this morning will be to consider the manner in which bodies when heated radiate heat, as relates to their surfaces.

If two different kinds of matter, say a piece of chalk and a plate of silver, were exposed to the sun's rays, they would receive heat in different proportions in a given time; the chalk would be rapidly heated, the silver scarcely at all; and the same thing would happen if these two substances were exposed to terrestrial heat. This circumstance depends not upon the nature or composition of the bodies, but upon their surfaces; for if the silver were covered with a film of chalk, it would be in the same condition as the chalk itself. This may be further illustrated as regards the sun's rays, by exposing a number of thin metallic discs to the sun, some coloured, others polished, when it will be found that the polished discs and the least coloured discs, have the least powers of accumulating heat; but that a black body will have the greatest accumulation for heat, by converting the radiant into sensible heat. Another difference in terrestrial heat is that which relates to colour; white and black paper will nearly have the same power of receiving heat, but if we use different substances of the same colour, the effects will be different; and bodies generally have the power of dispersing or radiating heat in the same proportion as their respective absorbing powers, mainly depending, as we shall presently see, on the nature of their surfaces. If two cannisters of the same size, made of the same metal, were filled with hot water, the one coloured black and the other polished, the black cannister would give out its heat quickest. These two powers have been called the receptive and radiant powers of bodies, and those substances which have the greatest reception, have also the greatest radiant powers. This subject has been fully investigated by Mr. Leslie, and carried to a great degree of refinement. I might show you this fact still more strongly by another experiment. If we take a metallic pail, fill it with hot water, and then cover the one half of it with a coating of lamp black, and leave the other half clean, it will be very evident that any difference in the radiation of heat from the vessel must depend upon the nature of its surface, and that such a difference does exist, may readily be detected by approaching the vessel with a differential thermometer; the heat thrown off from the white or polished surface, be-

ing scarcely sufficient to effect any change in the thermometer, whilst a considerable quantity will be thrown off from the blackened side. Mr. Leslie in his experiments also used a cube of this kind, the one surface presented a clean metallic polish, and was found to produce an effect upon the thermometer equal to 12°; another surface was covered with lamp black, and produced an effect equal to 100°; a third surface was covered with a thick coating of a solution of glue, and was equal to 80°; the fourth with red lead was equal to 95°. So that you see we have a great variety of substances, presenting a great range in their radiating and receptive powers; but you will understand that the difference is not so much owing to colour as to the kind of substance employed; thus we find, that white and black paper have nearly the same radiating and receptive powers. That the difference in the receptive powers depends upon the nature of the surface, may be very well shown to you by an arrangement of this kind, where a piece of tin plate has been cut into two, the one portion coloured, the other not; two small pieces of pomatum are then put upon the back of the plates, and a heated ball brought within an equal distance of both. That there is a marked difference in the receptive power of the heat in the two plates, may be seen by the fact of the piece of pomatum attached to the back of the blackened plate, whilst it would require nearly half an hour to melt the other piece. Another striking proof of the connexion between the receptive and radiating power, may be seen in the air thermometer, with the two globes coated, the one with silver leaf, and the other blackened, and you will see that the blackened bulb will be the only one which will show the reception of heat. So much greater is the receptive power of the coloured surface than of the silvered surface. Now these effects of structure have no relation to the internal structure of the mass considered, excepting that a certain thickness is necessary to produce the effect; and it is singular to see how important a certain degree of thickness seems to be for the conversion of radiant into sensible heat. Now the application of these facts will be very evident, if we wish to retain fluids in a heated state, the vessels should be clean and metallic, for, as you have seen, polished metallic surfaces have feeble radiating powers, and if they be allowed to become foul or blackened on their exterior, the heat goes off much more rapidly. To illustrate to you how strikingly the difference in the receptive and radiant powers of bodies depends upon mere surface, I shall take a piece of gold leaf and paste it upon a piece of paper, and however close it may be held to the fire, the paper will not be burnt, because the rays of heat are thrown off from the gold leaf as fast as they are received on the paper. Whenever we want, therefore, to throw off heat from surfaces by radiation, as from our fire places, such surfaces should be blackened.

I come now to the consideration of the third set of rays existing in that matter which emanates from the sun, or, in other words, of the influence of radiant matter in producing *chemical change*.

It is found, that if equal volumes of chlorine and hydrogen gases be mixed together, and placed in a dark room, that no immediate change takes place, but that if exposed to the rays of the sun, or light of day, decomposition takes place according to the intensity of the light; and that if exposed to the immediate rays of the sun, that explosion takes place. Now, if we examine the conditions on which we combine these two substances, we shall find that it cannot be owing merely to the temperature of the rays. If we take such a mixture of gases as that which I have just named, we shall find that a very high temperature, almost a red heat, is necessary, before we can produce that change, effected in a few minutes by exposure to the direct rays of the sun; which shows that there is something peculiar in the rays of the sun, in effecting chemical change, independent of their temperature. This power of effecting chemical change, resides externally to the coloured rays, when decomposed by the prism. Some of the salts of silver are very much changed on exposure to light; we find that if a portion of the salt be placed in a refracted cone of rays, we shall see that little change takes place in its colour, until it reaches the violet rays, and that the greatest change takes place a little beyond the coloured rays. You cannot have a better material for showing this fact than the chloride of silver, which you may easily obtain, by decomposing a solution of nitrate of silver with a solution of common salt; you should wash the white precipitated chloride, and place it in a stopped glass vessel; if you expose it to light, it will soon assume a greyish colour; but if you put any in the dark, it may be kept white for months. I must not leave this part of the subject, without adverting to some experiments of Morrichini, since followed up by Mrs. Somerville, respecting the magnetism produced by the decomposition of the rays of light. Mrs. Somerville made use of common sewing needles; she enveloped them in violet silk, and exposed them to the rays of the sun, and it was found that they had assumed magnetic polarity, similar to the north pole of the needle, which seems to point out a further

analogy between the agencies of light and electricity.

We have seen that light possesses the three properties of producing vision, heat, and chemical change; and it appears evident, that different rays possess different powers, that some possess the power of producing light, others heat, and others, again, chemical change; and the decomposition of light by the spectrum, exhibits a gradual deviation from the least refracted or heating rays, to the most refracted or chemical rays. Now the high importance of light in nature must be evident, upon the most cursory view of the phenomena it presents to us; and we cannot but observe its influence upon vegetables, as they are made to grow in situations from which the light is excluded. In celery, for example, it is the gardener's object to deprive it of that strong taste and bitterness which the plant naturally possesses, he therefore deprives it of light, and you know that the part of the plant said to be blanched, has much less taste and odour than that exposed to the air. Those parts of plants most exposed to air and light, contain the most active properties of the plant, as the bark and leaves; and that light is also essential to the development of vegetables, may be shown by sowing mustard seed in a dark cellar, the mustard will grow, and you may have it of two or three feet in height, but it will only put forth its seminal leaves. Plants which grow in a room imperfectly illuminated, always bend toward the openings by which the light enters; and the changes which vegetables effect upon the surrounding air, are mainly dependent on the influence of the sun's rays. That the influence of light in producing brilliancy of colour, is not confined to the vegetable kingdom, we may infer from the gaudy plumage in those birds belonging to tropical climes, while more sombre and dull tints characterise nocturnal animals, and those of the polar regions.

I have now to call your attention, according to the arrangement made of this course of lectures, to certain phenomena dependent upon heat, differing from those which I have already named. There are certain bodies which, under particular circumstances, emanate light, without undergoing combustion, when heated up to a certain point, and they have been called *phosphorescent bodies*; which has been considered by some, as a proof that heat is not only immaterial, but that it is in some chemical union with the substance. Of these bodies, perhaps, the fluates of lime, the fluor spar, the phosphate of lime, and some others of that kind, are the most singular, as giving out the phosphorescent appearance; but it is to be remarked, that if after they have been once heated they should be quenched, no after appearance of phosphorescence is produced by their temperature being again elevated. I have here, as you see, a heated iron plate, on which I shall throw a little powdered fluor spar; you see that a beautiful light is produced, resembling that of the glow-worm; yet, after the first time, no subsequent luminous appearance can be produced, and there is, moreover, no change in the chemical nature of the substance, by the increase of temperature. Then, again, there are other substances which may, by certain processes, be made to receive light when exposed to light, and be made to emit it again when placed in a dark situation. If we calcine oyster shells, we shall find on placing them in a dark room, that they will emit different kinds of light, red and green, and so on,—in the course of an hour or so they will lose this property; but if you then bring them again into the light, they will reacquire a fresh quantity of light. The Bolognian phosphorus, discovered by Cascariolo, a shoemaker at Bologna, is merely powdered sulphate of barytes, mixed with a certain quantity of mucilage into a paste; it exhibits the phenomena of phosphorescence in a very striking manner. It has been observed, that very hard and white spar, when exposed to light, and brought into a dark room, will assume a phosphorescent appearance, and Baldwin's phosphorus, as it is called, is made by heating nitrate of silver to a dull red heat, so as to form it into a compact mass.

There is another set of bodies said to be *spontaneously phosphorescent*, such as the glow-worm, the lantern-fly, the centipede and marine animals; they emit considerable light under peculiar circumstances, but what the nature of the matter which produces the light is, is not known. You are aware, probably, that various kinds of matter become luminous when passing into a state of putrefaction, and that the herring and mackerel especially, are very luminous when about to undergo putrefaction. If you rub two quartz pebbles powerfully together, a fine flash of light may be produced. Calomel, if powdered in the dark, will exhibit the same thing, as will the sulphate of quinine, if shaken in a glass vessel in the dark. The same thing has been observed even in ice, when falling down mountains, or when large masses of ice, floating down cataracts, strike against each other with violence, or upon other bodies; but we have not yet been able to refer these phenomena to any satisfactory cause.

I have briefly referred to incandescent bodies as a source of light, independent of the sun's light, and independent of chemical

change, and I have now to mention it in connexion with the latter, the intensity of the light being dependent upon the density of the substance and the elevation of temperature, but the state of any body when incandescent is not well understood. The immense difference of temperature required for the ignition or different substances is easily seen by some simple experiments. If I hold a piece of platinum wire in the flame of a spirit lamp, it exhibits a greater brilliancy of light than the flame itself, and that arises from the greater density of the wire; at the same time it must be understood, that there is no one substance which may not become luminous on a proper elevation of the temperature. The definition of flame, as given by Sir Isaac Newton, was that which accords with our present knowledge of it, namely, "that it is ignited vapour." Now, here you may observe a flame arising from a jet of hydrogen gas, which is scarcely visible, which shows us that flame may exist without any solid substance,—it is therefore ignited vapour; and that it possesses a considerable degree of heat, may be seen from its power of heating platinum wire to a great state of incondescence. But generally speaking, in the flame of a candle or lamp, it is the charcoal liberated by the decomposition of the material employed, which gives a body to the flame, which is the chief substance of ignition. If you apply a cold substance over a flame, or especially if we hold a wire gauze over a flame, we extinguish a portion of the flame, because we cool it, the wire gauze being an excellent conductor and radiator of heat, and that the cooled gaseous matter passes through, may be seen by again lighting it upon its upper surface. The flame of phosphorus is, as you know, exceedingly bright, which depends merely on the circumstance, that the flame of phosphorus is a solid substance, whereas the combustion of matter generally is in a state of vapour. The experiment was made of holding a wire gauze over the flame of phosphorus, and sufficient phosphorus passed through the wire to support combustion again on the opposite side when kindled. The discovery of these facts respecting the nature and properties of flame, led Sir H. Davy to apply them to the construction of that valuable contrivance, the *miners' safety lamp*, which will be explained when we have to consider the properties of carburetted hydrogen gas.

In the next Lecture, Mr. Brande will commence the description of the simple *supporters of combustion*.

FOREIGN DEPARTMENT.

ON THE MODUS OPERANDI OF ALOES, AND ITS MEDICAL PROPERTIES.

BY DR. WEDEKIND.

It is well accertained that the purgative effect of aloes does not take place till eight and sometimes twelve hours after its exhibition. Individuals in whom the secretion of bile is increased with the greatest facility, are those most powerfully acted upon by aloes. An excitement of the whole system, with quickness of the pulse, disagreeable heat of the abdomen, dryness of the mouth, succeeds the administration of this remedy. These effects are increased when the medicine is continued during several days, and if exhibited in very strong doses, it sometimes gives rise to serious hæmorrhages.

From experiments made on persons in health, and observations on persons in sickness, it has been found that a purgative which acts speedily, as, for instance, a mixture composed of a laxative infusion and sulphate of soda given at one time, with two or four grains of aloes, does not act differently than if exhibited alone. But aloes given two hours before the mixture, does not commence to operate till the effect of the latter has ceased, and the evacuations in second purging differ from those in the first, as well as in appearance as in smell. If, on the contrary, the aloes be given from six to eight hours before the mixture, the effects of the two remedies coincide, and the evacuations are generally very copious.

If the stools produced by the aloes are not watery, but bilious, fæculent, and have a specific smell, it is not owing to a special action on the large intestines, as authors have generally stated. The author of this paper had several opportunities of trying this remedy in icterus; and as long as the stools were white or grey, aloes did not purge even when exhibited in large doses; but the purgative effect immediately supervened, as soon as the fæcal matter commenced to contain bile, a proof that the presence of bile in the intestinal canal is a necessary condition of the purgative effect of the aloes. If the aloes were given in too large doses, a bilious diarrhœa generally followed.

It is, then, useless to give aloes with neutral salts, and other salts which act promptly, unless it is desired to promote the secretion of bile; and under such circumstances, the aloes should be given some hours before the other medicine. The pan-

creatic and hepatic secretions will be still more increased by the addition of calomel.

It appears, then, that the primitive effect of the aloes is on the liver, that this organ is excited by it as the salivary glands are by mercury, or the kidneys by cantharides; that its purgative effect does not depend, as that of many other cathartics, on an increased secretion from the intestinal canal, and an immediate excitement of the muscular fibres of the intestine; but the aloes is first absorbed, then carried into the circulation, and afterwards secreted by the liver, the action of which it increases.

Dr. Wedekind thinks, that the use of aloes is principally indicated when the secretion of bile is scanty, in constipation, from atony of the colon and rectum, and in icterus, which may be attributed to atony of the liver. This medicine should be employed with much caution in irritable persons. In cases of icterus, attended with a spasmodic or inflammatory state of the liver, obstructions of the liver with dropsy, as well as in persons affected with biliary calculi, and those disposed to hæmorrhoids, its use is decidedly improper.

INCUBATED EGG.

The various vital processes of nutrition and formation, which are carried on in the fœtus of the mammalia while in its mother's body, and by means of the most intimate connexion with the parent, are effected in the incubated chick by its own powers, quite independently of the mother, and without any extraneous substance, except that of the atmospheric air, and a certain degree of warmth. The egg is covered, within the shell, by a white and firm membrane (*membrana albuminis*), which contains no blood-vessels. The two layers of this membrane, which in other parts adhere closely to each other, leave at the large end a space which is filled with atmospheric air. This membrane includes the two *whites of the egg*, each of which is surrounded by a delicate membrane. The external of these is the most fluid and transparent, the inner one thicker and more opaque; they may be separated in eggs which are boiled hard.

The internal white surrounds the yolk, which is contained in a peculiar membrane called the *yolk-bag*. From each end of this proceeds a white knotty body, which terminates in a flocculent extremity in the albumen. These are called the *chalazæ* or *grandines*. Leveille distinguishes a third *white*, and considers the chalazæ as absorbing vessels floating in it, and destined to absorb it as well as the inner albumen, and mix them with the yolk during incubation. A small round milk-white spot, called the tread of the cock (*cicatricula* or *macula*) is formed on the surface of the yolk-bag. It is surrounded by one or more whitish concentric circles (*halones* or *circelli*), the use of which, as well as that of the cicatricula itself, and of the chalazæ, is not yet ascertained. We now proceed to notice the wonderful successive changes which go on during the incubation of the egg; and the metamorphoses which are observed both in the general form of the chick, and in particular viscera. The periods of these changes will be set down from the hen, as affording the most familiar example. It will be best to give, first, a cursory chronological view of the whole process, and then to make a few remarks on some of the most important parts of the subject. A small shining spot of an elongated form, with rounded extremities, but narrowest in the middle, is perceived at the end of the first day, not in nor upon the cicatricula, but very near that part on the yolk-bag (*nidus pulli, colliquamentum, aræde pellucida*). This may be said to appear before-hand, as the abode of the chick which is to follow. No trace of the latter can be discerned before the beginning of the second day, and then it has an incurvated form resembling a gelatinous filament, with large extremities very closely surrounded by the amnion, which, at first, can scarcely be distinguished from it. About this time the halones enlarge their circles, but they soon after disappear entirely, as well as the cicatricula.

The first appearance of red blood is discerned on the surface of the yolk-bag, towards the end of the second day. A series of points is observed, which form grooves, and these closing, constitute vessels, the trunks of which become connected to the chick. The vascular surface itself is called *figura venosa*, or *area vasculosa*, and the vessel by which its margin is defined, *vena terminalis*. The trunk of all the veins joins the vena portæ, while the arteries, which ramify on the yolk-bag, arise from the mesenteric artery of the chick. On the commencement of the third day, the newly-formed heat (the primary organ of the circulating process which now commences) is discerned by means of its triple pulsation, and constitutes a three-fold *punctum saliens*. Some parts of the incubated chicken are destined to undergo successive alterations in their form; and this holds good of the heart in particular. In its first formation it resembles a tortuous canal, and consists of three dilations lying close together, and arranged in a triangle. One of these, which is properly the right, is then the common auricle; the other is the only ventricle, but afterwards the left; and the third is the dilated part of the aorta (*bulbus aortæ*). About the same time, the spine, which was originally extended in a straight line, becomes

incurvated; and the distinction of the vertebræ is very plain. The eyes may be distinguished by their black pigment, and comparatively immense size; and they are afterwards remarkable in consequence of a peculiar slit in the lower part of the iris. I have found an exactly similar slit in the iris of the common lizard (*lacerta agilis*,) before it had attained maturity. Thus this structure belongs to such animals as have no *membrana pupillaris*. From the fourth day, when the chicken has attained the length of four lines, and its most important abdominal viscera, as the stomach, intestines, and liver, are visible (the gall-bladder, however, does not appear till the sixth day,) a vascular membrane *chorion*, or *membrana umbilicalis*) begins to form about the navel, and increases in the following days with such rapidity, that it covers nearly the whole inner surface of the shell within the membrana albuminis, during the latter half of incubation. This seems to supply the place of the lungs, and to carry on the respiratory process instead of those organs. The lungs themselves begin, indeed, to be formed on the fifth day; but, as in the fœtus of the mammalia, they must be quite incapable of performing their functions while the chick is contained in the amnion. Voluntary motion is first observed on the sixth day, when the chick is about seven lines in length. Ossification commences on the ninth day, when the ossific juice is first secreted, and hardened into bony points (*puncta ossificationis*). These form the rudiments of the bony ring of the sclerotica, which resembles at that time a circular row of the most delicate pearls. I have found this part much more elegantly formed than in the hen, in the incubated pea-fowl, of the fourteenth and following days. At the same period, the marks of the elegant yellow vessels (*vasa vitelli lutea*) on the yolk-bag, begin to be visible. On the fourteenth day the feathers appear, and the animal is now able to open its mouth for air, if taken out of the egg. On the nineteenth day it is able to utter sounds; and on the twenty first, to break through its prison and commence a second life.

We shall conclude with one or two remarks on those very singular membranes, the yolk-bag and chorion, which are so essential to the life and preservation of the animal. The chorion, that most simple, yet most perfect temporary substitute for the lungs, if examined in the latter half of incubation in an egg very cautiously opened, presents, without any artificial injection, one of the most splendid spectacles that occurs in the whole organic creation. It exhibits a surface covered with numberless ramifications of arterial and venous vessels. The latter are of the bright scarlet colour, as they carry oxygenated blood to the chick; the arteries, on the contrary, are of a deep or livid red, and bring the carbonated blood from the body of the animal. Hence, as is well known, the incubated bird perishes if the shell be varnished over, as the respiratory process is thereby suspended. The trunks of the arteries are connected with the iliac vessels; and, on account of the thinness of their coats, they afford the best microscopical object for demonstrating the circulation in a warm-blooded animal.

The other membrane, the *membrana vitelli*, is also connected to the body of the chick, but by a twofold union, and in a very different manner from the former. It is joined to the small intestine by means of the *ductus vitello-intestinalis*, (*pedunculus apophysis*,) and also by the mesenteric artery and vena portæ. It is well known that no true yolk is discoverable in the intestine of the incubated chick; yet sometimes (not indeed always, but under certain circumstances not yet sufficiently understood) air will pass from the intestine through this part into the yolk-bag. This fact, which was noticed by Haller, and after him by Maitrejean, has occurred also to myself in the case of a duck of the twenty-second day. The analogous umbilical bag of the fœtal-shark (which is found also in several other fishes, and some reptiles) is connected to the small intestine—at least to the *bursa entiana*, which is a peculiar dilatation of the posterior end of the intestine.

In the course of the incubation, the yolk becomes constantly thinner and paler by the admixture of the inner white. At the same time, innumerable fringe-like vessels, with flocculent extremities of a most singular and unexampled structure, form on the inner surface of the yolk-bag, opposite to the yellow ramified marks above-mentioned, and hang into the yolk. There can be no doubt that they have the office of absorbing the yolk, and conveying it into the veins of the yolk-bag, where it is assimilated to the blood, and applied to the nutrition of the chick. Thus, in the chicken which has just quitted the egg, there is only a remainder of the yolk and its bag to be discovered in the abdomen. These are completely removed in the following weeks, so that the only remaining trace is a kind of cicatrix on the surface of the intestine.—*Coulson's Edition of Blumenbach's Comparative Anatomy, by Lawrence.*

ROYAL INFIRMARY, EDINBURGH.

FATAL CASE OF CONTUSED WOUND ON THE LEG.

The following case is published for the purpose of showing the consequences which sometimes result from slight injuries; the effects of injudicious treatment; and the neglect of saving life by amputation, when circumstances demand its performance.

James Nevin, a boy of eleven or twelve years of age, was admitted on the tenth of October, under Dr. Ballingall, for a contused wound of the lower part of the leg, inflicted by the fall of a large stone. The wound, about three inches in length, extended obliquely from the inner ancle to the inside of the spine of the tibia; a considerable portion of the integuments seemed to have been destroyed; there was a slight sanious discharge oozing from the parts, and the leg was crusted over with a layer of dried blood. Two stitches were inserted to keep the edges of the wound in apposition; and cloths dipped in cold lotion applied, with the blankets comfortably turned over the whole.

11. The margin of the wound was slightly swelled; an inflammatory blush surrounded it to about an inch in extent; and an unhealthy ichorous discharge flowed from the sore. The stitches were cut away by Dr. Ballingall; slips of adhesive plaster applied in their place; and the lotion ordered to be continued.

12. On the removal of some dirty rags, and the adhesive straps, the wound presented a more extensive surface; its bottom was covered with the deadened integuments in a state of slough; and a small quantity of sanio-purulent matter was discharged. The swelling and redness had extended up one-third of the leg and to the whole of the foot, of the pain of which he complained much. He was restless during the night; his countenance flushed; pulse ninety-six; tongue white; his bowels inclined to costiveness, had been opened by castor oil, and his thirst allayed by lemonade.

13. The local and constitutional symptoms were much aggravated during the night; the inflammation had extended from the toes to the knee, enlarging the leg considerably; and the process of sloughing set up in the edges of the wound. The pulse had risen to a hundred and six; and the tongue became more furred and of a darker shade. Twelve leeches were applied under the knee; and a poultice for the first time was ordered to the wound.

14. To-day he was in every respect worse than at the last visit; the sloughing was going on more actively in the edges of the wound; its surface was covered by a dense, yellowish, tenacious matter. Pulse much the same as yesterday; and the bowels kept open by castor-oil. Suspecting that matter had formed, or that blood had been effused in consequence of the contusion, Dr. Ballingall made three incisions into the leg where the swelling seemed greatest—one about two inches in length, below the knee; the other, somewhat smaller, over the tendo achilles. A small quantity, however, of bloody serum only issued from the wounds, there being neither matter nor ecchymosis present. The poultice was ordered to be continued to the original wound; and the fresh incisions to be dressed with dry lint.

15. The pulse since our last visit rose to a hundred and twenty; the tongue became more furred, dry, and tremulous; the ulcer continued to extend at its edges; and the discharge appeared more copious and offensive. On removing the lint from the incisions, made yesterday, their sides were dry, corrugated, and covered with dry blood, as if nature had made no effort at reparation. The whole to be dressed as before, with the addition of the resinous ointment under the poultice to the first ulcer.

16. Scarcely any alteration has taken place since yesterday; the fresh wounds showed some disposition to healthy suppuration; the tumefaction of the leg had not subsided; he complained of a deep-seated pain in the ancle-joint, for which leeches were ordered; and the former dressings to be continued.

17, 18. A slight amendment in the general circumstances of the case took place within the last two days. The pulse fell to a hundred and ten, but was still weak; the sloughing entirely ceased; the discharge become profuse, thin, and of a greenish colour; the swelling of the leg diminished considerably, but the foot continued œdematous; the poultice was discontinued, and the wounds dressed simply with lint.

19, 20. The pulse during these dates fell to ninety-six; but he complained of restlessness during the nights, and had three or four paroxysms of shivering; the granulations on the original sore being pale and unhealthy, they were rubbed over with a pencil of nitrate of silver by Dr. Ballingall, and ordered to be dressed as usual.

21, 22. Within the last two days the pulse rose to a hundred and thirty-six; he had also several attacks of shivering, but without being followed by sweats; the lips grew pale, and the countenance generally displayed much constitutional weakness; his appetite failed, and food disagreed with him; the granulations of the several

wounds remained pale and unhealthy, and discharged from four to six ounces of greenish pus daily; and a sinus formed from the original sore to the incision made above the heel.

23, 24. A slight amendment in his general health took place within the last two days, the pulse having fallen to ninety-six, and being entirely free from the attacks of shivering, and resting well at night. The œdema of the foot subsided considerably; but the quantity and quality of the discharge remained the same; and superficial sinuses formed over the great toe.

25, 26. No alteration in his state had taken place until the night of the last of these dates, when he had several severe rigors, became delirious, and attempted to escape out of the ward; his pulse in the morning was a hundred and forty, feeble and intermitting; and the hectic countenance fully marked. The whole leg again became œdematous; and the original ulcer presented an unusual appearance, the granulations being elevated above the surrounding integuments, and looking as if they had been distended with serum in common with the other parts of the limb. In this state he was ordered purging mixtures with tartrate of antimony and an opiate at bed time. Ulcers to be dressed as before.

These medicines the boy never took, his friends, suspecting, what was really the fact, that his health had suffered from ill-treatment and confinement in bad air, took him away in the course of the afternoon, and he died on the first or second day after his removal!

SCOTUS.

Edinburgh, Nov. 17, 1827.

MR. COOPER ON THE TREATMENT OF ERYSIPELAS.

To the Editor of THE LANCET.

SIR,—In your report of the speeches, delivered at the last meeting of the Medico-Chirurgical Society, Mr. Lawrence is stated to have argued, that because I disapprove altogether both of extensive and numerous incisions for the prevention of apprehended suppuration and gangrene in phlegmonous erysipelas, I might save myself the trouble of criticising the details of the practice. This mode of reasoning is not what I should have expected, from one so distinguished for correctness as the author of the paper on erysipelas. Had I been an admirer of long or numerous incisions, certainly a critical examination of the practice could not properly have been expected from me; on the other hand, the very circumstance of my having dissented from the advocates of this treatment, is a plain reason why I should fully explain the considerations which lead me to differ from them. At a future opportunity, therefore, I mean to enter more minutely into a critical examination of this practice; and it will then be seen, that I am very far from having yet brought forward every argument capable of being urged against it.

Another statement in Mr. Lawrence's speech requires correction: it is said, that I have alluded to three unsuccessful cases, not one of which I seem to have personally witnessed. The fact is, that the case treated on Mr. Copland Hutchison's plan, *was seen by me*, under Mr. Vincent, in St. Bartholomew's Hospital. It was not an instance of mere sloughing of the cellular substance after the incisions, as Mr. Lawrence has supposed, but a case in which a great part of the integuments of the arm was destroyed, the limb permanently crippled, and the patient's life nearly lost. It is not for me to pronounce what share the incisions had in bringing on so unfavourable a termination; and the only inference which I presume to make is, that the practice, severe as it is, will sometimes fail, like all other means, in arresting the progress of the disorder.

Of the example of fatal hæmorrhage I was not an eye-witness; but Mr. Lawrence will not be inclined to find fault with the authority on which I mentioned the fact, when he is informed, that some clinical remarks made by himself at the hospital, and published in a former Number of THE LANCET, were the sources of my information. I must also maintain, with respect to this and every other case to which reference may be made in my writings, that if the accounts given of them be not chargeable with inaccuracy, it can be of no importance whether the patients were actually visited by me or not. Mr. Lawrence argues, that the possibility of a fatal bleeding ought not to be urged as a reason against the practice of extensive incisions in erysipelas, any more than against amputation. The obvious answer to such reasoning is, that a limb, whose removal is decidedly a matter of necessity for the preservation of life, leaves no alternative: amputation is the only measure by which its sufficiently prompt separation can be effected; and whatever may be the risk of hæmorrhage, it must be encountered. On the other hand, the making of large incisions for the prevention of anticipated evils in phlegmonous erysipelas, cannot yet be said to be a method, the necessity of

which for the patient's recovery, or even for his benefit, is acknowledged by all experienced and judicious surgeons, like amputation; *it is not the only resource*, as the latter operation is in a variety of circumstances. Hence, in estimating the claims of Mr. Lawrence's mode of treatment to adoption, no bad consequence, to which it is liable, would be overlooked by an an impartial judge.

With regard to the case, in which I said the patient never revived from the shock of the extensive incisions, the particulars were communicated to me by the medical gentleman associated with Mr. Lawrence in the management of the patient, and whose opinion agrees with my statement. To these bad cases may be added a fourth, which I might have visited; but as it was announced to me that the patient was *in articulo mortis*, and some business required my attendance in another direction, I declined to be "in at the death."

Few proposals, supposed to be new, are now ever made in surgery, bad as they may be, without some little contest taking place about the honour of having first suggested them. If one surgeon says, that he began to cut erysipelatous parts ten years ago; another is sure to declare, that either he, or one of his friends, did so twenty years back. For checking such ambition in the present instance, a few lines, written by Dr. Freind more than a hundred years ago, will suffice: "In inflammatory cases, and in *an erysipelas particularly*, it is often seen by experience, that *scarifying* upon the part, when the membranes are loaded and thickened, will remove the inflammation in a very sudden and surprising manner."—(*Hist. of Physic*, p. 76. v. 1. ed. 2.) This practice, then, notwithstanding its ancient trials, and the recommendation of Dr. Freind, seems not to have been attended with benefit enough even to prevent it, as far as erysipelas is concerned, from sinking into oblivion. No doubt, many cases of severe phlegmonous inflammation might have a large cut made in them, and yet the patients recover; but escapes, notwithstanding bad treatment, should always be discriminated from cures promoted by truly efficacious measures.

I am, Sir,
Your most obedient servant,
SAMUEL COOPER.

71, Great Russell-street,
Bloomsbury-square,
Nov. 26, 1827.

ST. BARTHOLOMEW'S HOSPITAL.

PHAGEDENIC CHANCRE OF THE PENIS.

C. T. ætat. 47. In the situation of the frænum there is a chancre of the size of a beech-nut, of a month standing, presenting a foul dirty-white surface, emitting an ichorous discharge. No vestige of the frænum remains. The body of the penis is considerably tumefied, having that peculiar hardness of character attendant on syphilitic inflammation. The local pain is very inconsiderable; there is no constitutional excitement, tongue clean, pulse, &c. natural. Mr. Lawrence (to whom the case belonged) appeared to regard the present character of the chancre of that destructive nature, as to demand the adoption of the most rigorous measures, in order to arrest its phagedenic progress. The ill-conditioned appearance of the chancre, he considered, as referrible to the effects of excessive inflammatory action; and although he did not question its venereal character, yet, in order to subdue the local inflammatory action, he was inclined to believe that general depletion offered the best chance of success. Accordingly ʒxviij of blood were ordered to be abstracted from the arm, a dose of calomel and jalap to be administered, xiv leeches were directed to be applied to the penis, and afterwards a bread and water poultice.

Oct. 12. The real character of the ulceration is now unequivocal. It circumscribes a space double that of yesterday. The local pain is trifling; there is no constitutional disturbance. Mr. Lawrence now regarded the previous measures as wholly inadequate to alter the phagedenic character of the chancre. Mercury was substituted; two grains of calomel, and one third of a grain of opium, to be taken every four hours; a drachm of blue ointment to be rubbed in every night, and the black wash to be applied to the sore.

13. The phagedenic character of the chancre seems altered. The integuments of the penis, forming the circumference, have lost their dark blue appearance; the surface of the chancre is less foul and dirty, and the penis itself is much less swollen. The calomel and opium pills to be taken every six hours, and the ointment and black wash to be continued.

14. The sore decidedly improved; the pain has been trivial and unimportant from the first; the swelling of the penis is progressively decreasing; the patient's pulse and sleep are natural; his appetite good. The mercury has affected his mouth.

16. The aspect of the sore is healthy

throughout; its foul dirty-white appearance is quite gone, and is succeeded by a healthy cicatrizing surface; the mercury to be discontinued.

In little more than a week from the last date the sore had completely cicatrized.

It appears to us, that the present was a case which indicated a mercurial treatment from the beginning. There was no constitutional disturbance; scarcely any local pain; the tumefied state of the penis was a tumefaction different from that resulting from common inflammation. It had that peculiar hardness which attends syphilitic inflammation; the sensation of heat was also considerably less than is felt during common inflammation. The line of demarcation indicating the two different modes of treatment, in cases of this nature, we think is clear and well defined. If there be much local pain, with constitutional disturbance, and a small and quick pulse, a pulse of irritation, or a pulse of considerable fulness and frequency, the antiphlogistic plan of treatment, to a greater or less extent, is evidently indicated; but full doses of laudanum best suit the pulse indicative of irritation, — the lancet, a pulse of fulness and frequency. If the local pain be but trifling, without constitutional disturbance, we might rest assured that the phagedenic character of the ulcer is consequent on syphilitic inflammation, and requires mercury for its cure.

ABUSES IN THE WESTMINSTER HOSPITAL.

Sir,—In reply to a letter which appeared in the last Number of your truly valuable Journal, from the pupils of the Westminster Hospital, I wish to state, that when I alluded to Mr. Guthrie's absence from the hospital on Saturday the 27th October, I made that observation merely because it happened to occur on the same day that one of the pupils felt himself called upon to lay before the public the shameful neglect of attendance on the part of the surgeons of that hospital. It was not many weeks previous to this occurrence, that Mr. Guthrie absented himself from the hospital in a similar manner, on the principal operating day in the week, (Saturday) previous to which occasion Mr. Harding informed the pupils, that he would perform the operation of lithotomy upon a delicate little boy of a scrofulous habit of body, who had for some time suffered much from irritation of the bladder. The day for the performance of this capital operation having arrived, a vast number of students assembled at the hospital, when, to their great surprise and astonishment, they were informed that the operation would not take place on that day, in consequence of Mr. Guthrie's having gone into the country on a shooting excursion, and requested the postponement of the operation until his return to town. Surely Mr. Guthrie will not pretend to say, that he had much regard for the sufferings of this little child, when he was kept in the hospital till the latter end of the following week before he was operated on. Being near some of the surgeons at the time the information reached the pupils, I heard one of Mr. Guthrie's colleagues declare, that it was a very great shame the pupils should be disappointed in this manner, and the surgeons of the hospital interrupted in the performance of their duty, merely for the sake of gratifying Mr. Guthrie's propensity for shooting. I think I have now sufficiently substantiated the truth of my assertion in reference to the palpable neglect of Mr. G. in the performance of his duty, without adverting to the irregularity of his attendance on other occasions, which I defy my opponents to have the hardihood to deny. I do not believe Mr. Guthrie stated the truth when he declared that The Lancet was not read by the other surgeons of the Hospital, for on the Saturday on which my letter appeared in The Lancet, Mr. Lynn informed the pupils immediately after his arrival at the Hospital, that he was sorry to find the students were obliged to complain of neglect of attendance on the part of the surgeons, and that he had himself come at the appointed hour to see his patients, and would have great pleasure in going round the ward with any of the students that wished to accompany him; furthermore he declared, that the grievances complained of should be redressed if possible. Had Mr. Guthrie the condescension to make a similar statement when he harangued the pupils in the theatre, I should not have taken the trouble of exposing his faults. In bringing this letter to a termination, I shall state that I entertain no hostile feelings whatsoever towards Mr. Guthrie or any other of the surgeons of the Hospital, my only object being to state the truth; and had the exclusion made by a pupil in his letter extended to any of the other surgeons instead of Mr. Guthrie, my observations would have been directed towards that quarter. Being still convinced of the truth of my former statement, notwithstanding the blunt and groundless assertions of my opponents to the contrary, I shall continue to subscribe myself, Sir,

Amicus Justiciæ.

Nov. 27, 1827.

THE LANCET.

London, Saturday, December 1, 1827.

The observations which we deemed it our duty to offer to the notice of the public on a former occasion, relative to the medical qualifications of Coroners, have provoked much interesting discussion amongst Barristers, and elicited a vast number of valuable communications from many intelligent members of our own profession. The novelty of our proposition seems to have excited, in many quarters, considerable surprise; surprise, however, accompanied with the strongest approbation of the course we have recommended to be adopted. That coroners should be endowed with superior medical attainments for the adequate performance of the functions they have to execute, is a fact as indisputable, as that a Judge of the court of King's Bench should be acquainted with the practice of that court. Coroners, in virtue of their office, either have or have not certain public duties to execute; if the former, we should be glad to know how these can be beneficially discharged if those officers are totally ignorant of the principles on which their decisions should be grounded; if the latter, the institution of Coroner is useless, and ought to be abolished. It cannot be denied, however, that the Coroner's court is one of vast importance to the community; that it is one of the main pillars of criminal justice, and that the mode in which its functions are performed should be zealously watched, both by the public and by government. To suppose that a person who is ignorant of anatomy, physiology, pathology, surgery, and chemistry, can correctly charge a jury relative to the *causes* of death in a majority of inquests, is so truly ludicrous, that the bare discussion of the question amounts to an absurdity. But it will probably be said, that Coroners are governed in their decision by the *evidence of* medical practitioners, and that the institution thus derives the full benefit of medical knowledge. The opinion of a judge and that of a witness are generally regarded in a very different light by all intelligent juries; as it not unfrequently happens, that *a witness* has often the most powerful motives for falsification and concealment. Dozens of bodies are annually submitted in the hospitals of this metropolis to the Coroner's inquisition, which had ceased to live in consequence of the neglect and unscientific treatment they had been exposed to in those institutions. But does the physician in his evidence state, that he had directed a patient's *throat to be cut*, because the unfortunate being was afflicted with an aneurism of the aorta? or would a surgeon state that he ripped open the abdomen for prolapsus ani? or that he had slit up the intestines to effect the removal of a foreign body, where none existed; or that he frequently operated on "enlarged glands," in "mistake for strangulated hernia;" that he had bandaged the patient's knee or his arm, until it caused death, either from irritation or mortification? or that he had neglected to apply the trephine in compound fracture of the skull, in a case where a large portion of bone was piercing the dura mater, and pressing on the brain? Such candour can scarcely be expected, as men of equal liberality with Mr. Sankey, of Dover, are rarely to be met with. That Gentleman indeed swears, that Weston's brachial artery was *not punctured*; and he also swears that *he tied the vessel*; of course, *because* it was *not* punctured, *because* there was no bleeding. Had Mr. Shipden been a medical coroner, we are inclined to suspect that the jury would have brought in a very different verdict from that of "Died by the visitation of God;" and most probably it would have been recorded, that the deceased had "Died by the visitation of Mr. Sankey." Of course no medical coroner would have believed, from the evidence of Mr. Sankey, that the artery had not been

cut, or would have deemed it improbable, that a person who could give such evidence, had allowed the patient to die from hæmorrhage. Two ligatures on the brachial artery, and the vessel not punctured! and both ligatures above the place where the wound must have been inflicted! It is seldom that we have heard of such extraordinary surgery or such peculiar swearing—the one a scandal to the law, and the other an opprobrium to the profession of medicine.

We have been much gratified in seeing in the daily journals that a petition has been presented to the Court of Chancery, praying that the Lord Chancellor would set aside the verdict of the jury, in the case of the Rev. William Holmes of Nottingham, against whom a commission of lunacy was issued. It will be recollected that we offered some severe animadversions on the conduct of this jury, in our 220th Number, and exposed the absurdly contradictory terms of the verdict, denouncing it as a most dangerous innovation on the liberty of the subject. The Lord Chancellor took a precisely similar view of the question, reprobated it in strong terms, and without hesitation directed it to be set aside. We must not be understood as saying, that the Rev. Mr. Holmes is capable of managing his own affairs; but that a verdict so obtained, so contradictory, so utterly senseless, *ought not to stand.*

A Dissertation on the Features and Treatment of Insanity; containing a Retrospect of the most important Modern Theories on the Subject. By JOHN SYER, Surgeon, &c. London: T. and G. Underwood, Fleet-street. 1827. 8vo. pp. 338.

THE author of these pages having had, as he himself admits, no great intercourse with the insane, cannot be expected to have made any advancement or discoveries, either in a knowledge of the functions or pathology of the brain, or of those moral, or rather mental changes, which may perhaps occur independent of any organic derangement; and accordingly, we apprehend the well-informed reader will find in this work little original matter. But if it be considered merely as an exposè and review of the doctrines which have hitherto prevailed on this most important department of medical science, for which, we believe, it is intended, its purpose has been fully and ably answered. The observations and reasoning of the author are conveyed in very lucid and classical language; and as the illustrations are every where judiciously introduced, the work is well adapted to impress on the mind of the reader, those facts and consequent practical deductions, to which the author has had the good taste to lay no claim as peculiar to himself.

Mr. Syer, after ascribing our want of information on this extended subject, to our limited knowledge of the phenomena of the mind in health as well as in disease, and the insuperable difficulty of tracing the mode of connexion that subsists between the elements of the human understanding, and the anima' superstructure of man; proceeds to show the impropriety of those views which have been sustained by many authors, and which enter so largely into the doctrines of phrenology, of the necessary connexion between disorganisation of the brain and insanity; and attempts to prove that they cannot be by any means considered in the light of cause and effect.

"And we live to see multitudes of the most violent and outrageous lunatics attaining very advanced periods of existence, under every modification of mental suffering, and where the body appears scarcely to sympathise with the mind; or we find that the animal machine survives the mental derangement, when the state of both is nearly a wreck."

The opinion of the celebrated Pinel, that insanity was not peculiarly frequent in Great Britain, which has been erroneously

asserted by many, and, indeed, that it was more prevalent in France and Germany, is confirmed by the comparisons which Mr. Syer has been able to make.

"If any confidence can be reposed in the comparative statements of the prevalence of insanity amongst our fellow creatures in other parts of the civilised globe, and Dr. Burrows has taken some pains to investigate the point, the result will sufficiently screen us from any prescriptive right to arrogate to ourselves, or to yield to the poet's sarcasms,

'Pudet hæc opprobria nobis!
Et dici potuisse, et non potuisse refelli.'

An unprejudiced appeal to the annals of other civilised quarters of Europe, will serve to demonstrate, that this deplorable malady is abundantly more prevalent in France and Germany, in proportion to the population, than in Great Britain."

The peculiarities of this important malady are, we think, described with considerable pathos and classical taste, and the account is intermingled with several very illustrative and interesting cases.

We now come to a part of the subject on which the author has, we think, displayed much sound reasoning, that of the medical jurisprudence, in which he doubts the propriety of juries in every case returning a verdict of insanity, where suicide has been committed:—

"But instances are not wanting where individuals have previously betrayed no other characteristic of derangement than temporary hypochondriasis or melancholy, and have still premeditated suicide with the utmost decision and coolness, the act itself seeming to have resulted from the most deliberate survey of the source of despondency, and a total disregard to the consequences entailed on their families."

There cannot, we think, be a doubt that suicide is occasionally committed where the individual is in the fullest possession of his senses; and indeed, in certain cases, where any powerful worldly causes exist, for the "tædium vitæ," the very act of destruction itself, betrays, in these instances, the full integrity of the mental powers. Although the verdict is one, certainly, of the most merciful kind towards the surviving relatives, yet we agree with Mr. Syer, in questioning, in numerous cases, its strict correctness; nor is it free from bad consequences; "and I have been prompted to think, that many individuals, availing themselves of this construction on the part of juries, have been less scrupulous in having recourse to this barbarous and heinous practice."

But the author goes the length of doubting the propriety or wisdom of the legislature, in ordaining perpetual imprisonment to those maniacs who have committed murder: "but there are cases," he says, "where we may be allowed to challenge the justice or policy of prolonging the sentence of incarceration beyond the avowed limits the existence of the derangement." Here we think Mr. S. has taken a partial view of the subject, and has not rightly considered that the maniacal offender is confined, not so much to punish him, as for the security of the public, and to guard against imposition. We hardly think that any person would feel himself secure in the presence of one, although at the time in sound mind, who had on any former occasion deliberately attempted to destroy the life of his fellow creature.

In the second part of the work the treatment of the disease is considered, and here the author seems to agree with those writers who contend for the general impropriety of much blood-letting, which appears to us to be the only safe and effectual remedy that can be adopted in the early stages of the complaint, in nine cases out of ten, although he allows that there are very many cases in which, even to a considerable extent, it is highly beneficial, especially in those which seem to arise from irregular determinations of blood at the changes of life, and particularly at the cessation of the menstrual discharge in women. The author thinks highly of small alterative doses of mercury; and recommends, we think with much good sense, the medical prac-

tioner to pay the greatest attention to the state of the alimentary canal, which undoubtedly, in many cases, even of acute mania, exerts a very powerful influence. He has quoted several cases of the disease arising solely from abdominal derangement, of which we select the following :—

"The maniacal symptoms had occurred only three or four days previous to my first visit, and the remote cause of his affliction, independent of disordered primæ viæ, was perfectly unintelligible. He was incessantly talking incoherently, but did not appear irrascible, nor did he discover any peculiar illusion of thought."

It is needless to insert the whole case, suffice it to state, that the man was perfectly cured in the course of a month, by the continued use of purgatives, large quantities of a dark fœcal matter being daily evacuated.

It has been well observed by Spurzheim and others, that where mania exists, a diseased state of the brain must exist also, although our knowledge of pathology is not sufficiently accurate to enable us to detect the alteration of structure. The converse of these opinions amounts to a denial of the influence of therapeutic agents in the treatment of mania; and such practitioners, if they have any regard for consistency, should never resort to medicinal measures.

In the concluding observations, the reader will find a critical analysis of the reasons why, in different hospitals, or under particular management, the cures have been many or few, and likewise a good description of those symptoms, or that previous history which should lead him to form a correct prognosis, and point out the particular mode of treatment.

On the whole, although the author cannot be considered to have advanced any thing new, his work is one of very considerable merit, and we have no hesitation in recommending it to the notice of our readers.

The Dublin Dissector, or Manual of Anatomy, &c., for the Use of Students in the Dissecting Room. By a Member of the Royal College of Surgeons in Ireland. Dublin. Hodges and M'Arthur. 12mo. pp. 482, 1827.

This work differs in no very essential respect from those manuals of anatomy which we already possess, excepting that some of the descriptions are given with greater minuteness, and, in some points, with greater accuracy. It is rather a singular fact, that notwithstanding the high character which Dublin possesses as a school of anatomy, no manual of the science, prior to the one before us, has emanated from that city. The work is almost entirely descriptive, very little of the practical application of the science being blended with the descriptions; a plan which we think by far the most advisable that can be adopted in a manual which is intended for the use of the pupil in the dissecting-room. There is a chapter devoted exclusively to the consideration of the joints, but the bones are not separately described.

This manual is published without the name of the author, a circumstance which, if it arose from pure modesty, would be a remarkable feature in the medical literature of the present day. But as there exists in Dublin more schools of anatomy than one, we suppose the name of the author has been withheld, for the purpose of removing any objection which the teacher of one school might feel (in case it were generally known) in recommending the production of the pupil or teacher of any other school. In a work of this kind, the absence of the author's name makes little difference in the estimation which one forms of its value, because the statements contained in it do not rest on mere *viva voce* testimony, but are subjects of demonstration, and capable of being confirmed if true, of being refuted if false. The work is executed with care, and is well deserving the notice of medical students.

MEDICO-CHIRURGICAL SOCIETY,
November 27, 1827.

BENJAMIN TRAVERS, Esq. in the Chair.

THE meeting of this Society on Tuesday evening was by no means so numerously attended as at any of the previous discussions of the present session: the number of members present was, however, respectable. After some business of little public importance had been gone through,

Dr. SEYMOUR proceeded to read a communication of his own, on fungus hæmatodes of the stomach, which contained an account of three highly remarkable and interesting cases of very extensive fungoid disease of the coats of the stomach, pylorus, and duodenum. In one of these, the disease seemed to have extended along the gall ducts, from the small bowel into the liver, which was found to partake in a great degree of the same diseased structure as the intestinal canal itself. The vessels of the liver were filled with the fungoid matter, which was perceived on tearing the parenchyma of this viscus. The stomach had been found, at its lower part, to be nearly filled with the matter, which exactly resembled in appearance the encephaloid formation. A man of the name of Rae had been admitted into St. George's Hospital, under the care of Dr. Hewett, complaining of symptoms of obstruction in the alimentary canal, on the 12th of September; at which time a tumor could be perceived in the region of the pylorus, which left little doubt but an organic disease of the stomach or pylorus existed. It was curious, that in this case as well as the others, the patient did not suffer from pain, nor was he often affected with vomiting. After remaining some time in the Hospital, he at length sunk, being extremely emaciated and exhausted. On dissection, which was conducted by Messrs. Brodie and Hawkins, a tumour was found, which arose from the stomach, and extended to the parieties of the abdomen; the inner surface of the stomach was ulcerated, and into its cavity were projecting large pieces of fungous matter, which appeared completely to obstruct the orifice of the pylorus. In this patient, however, the chyme had found its way, during life, from the stomach into the small intestines, as food had not been rejected by vomiting. The structure of the disease in all these cases had exactly resembled that of the true fungus hæmatodes, as described by Laennec, Andral, Baillie, Wardrop, and others. In the patient whose liver was so extensively diseased, Dr. Seymour had also found several large tubercular formations, which were imbedded in the parenchyma of the viscus, and could be easily turned out of it. Every variety of treatment had been adopted in this patient, and the hydriodate of potass had been given in large doses. Dr. Seymour, in concluding his short, though interesting and instructive communication, observed, that it was a peculiar feature in the history of these cases, that patients labouring under so extensive disease of the stomach should not have suffered in any degree from pain or vomiting; symptoms which are so generally met with in almost every affection of the stomach. The want of these common symptoms could only be ascribed to some singular peculiarity in the constitution of the individuals. In some cases of disease of the stomach, where the patient suffered severely from pain, he had found the exhibition of the prussic acid to afford very great relief.

Dr. JOHNSON had paid some time ago a great deal of attention to the diseases of the stomach. He had consulted all the authentic cases where accurate accounts of the dissections had been given. From these it appeared, and in particular from the statements of Chomel, that where the chyme passed through the pylorus into the duodenum, pain and vomiting were not generally induced; these symptoms being only present in cases where obstruction of the orifice of the pylorus existed; and perhaps this might explain the want of these symptoms in the cases related by Dr. Seymour. In three-fourths of the patients affected with organic disease of the stomach, it was generally found on dissection, that no ulceration of the coats existed, but merely a thickening and induration of them, particularly near the pylorus. Perhaps Dr. Seymour would have the goodness to state whether, in the patient described above, the obstruction in the pylorus had been complete, as thus might probably be explained the want of these symptoms.

Dr. SEYMOUR observed, that in the case alluded to, on dissection it was found, that the fungous mass filled nearly entirely the lower portion of the stomach, and consequently obstructed the opening of the pylorus, but that being of a very compressible nature, it probably might have yielded so as to admit of the passage of the chyme, which had undoubtedly found its way into the small intestines, as the food had not been rejected by vomiting.

Dr. A. T. THOMSON had attended a gentleman who had previously been in the West Indies, in company with the late Dr. Baillie and Dr. Ainslie, on whose death, by dissection, a state of parts was found resembling those appearances described by Dr. Seymour. Dr. Thomson did not agree in the propriety of denominating the disease fungus hæmatodes. He had also had an oppor-

tunity of seeing a patient where the liver had been diseased in a similar way to a great extent, and he had found, besides the fungoid structure, the existence of tubercles, where these seemed to have been produced merely from change of the natural structure of the viscus, and not from any new formation, as the tubercles could be distinctly traced by a well-marked line, to have been merely a conversion of its structure: a preparation of this kind was in the possession of his friend Mr. Charles Bell. From this he argued, that fungus hæmatodes was not a proper designation for the diseased appearances, as described in Dr. Seymour's paper.

Mr. TRAVERS paid a high compliment to Dr. Seymour's paper. He had seen many instances of similar disease in the stomach and intestines, and particularly the larger and lower bowels. He seemed to think that a state of contraction existed previously to the occurrence of the ulceration, which occurred when the obstruction had taken place to such an extent, that a *cul de sac* had formed above it. Ulcerations then were produced, and extravasation might or might not occur, according to the situation of the orifice. Scirrhus and fungus hæmatodes might occur in the same diseased structure, and in some cases of scirrhus, for instance, of the mamma, he had met with tubercles co-existing. In regard to the pain in malignant disease, it would be found that a great variety existed in this respect. It was astonishing to see what ravages cancer could commit, without giving rise to severe sufferings. He was in the habit of seeing cases of scirrhus, where the disease assumed its severest characters, and where in the last stages the patient frequently did not suffer much from severe pain. It was difficult to distinguish between the different kinds of malignant disease.

Dr. JOHNSON denied the truth of the assertion of Dr. Thomson, that tubercles were merely the alteration of the original structure; he considered them to be entirely a new formation.

Dr. THOMSON did not mean to draw from the case he had described, such general conclusions concerning the formation of tubercles, that appeared merely to be the case in that instance, where the tubercular formations were evidently continuous with the structure of the liver itself.

Dr. LOCOCK thought that they were wandering from the more immediate points connected with the communication. In cases of malignant disease, there was a great variety in regard to the *pain*. He had observed, that in cases of scirrhus of the uterus, the pain was generally constant and of a severe nature, and that in those patients where the mucous membrane was ulcerated and covered with fungi, resembling fungus hæmatodes, the pain was not present. Dr. Locock drew an analogy between these latter affections of the uterus, and those described by Dr. Seymour, and thus accounted for the absence of pain in his patients.

After some observations from Mr. Lloyd, the discussion on this paper finished, and

Mr. LLOYD then read the account of a case, where an aneurism had been cured by compression, without obliterating the trunk of the artery, which had been transmitted to the Society by Mr. Salter, one of their members. A woman, in the year 1816, while walking on the pavement, slipped, and in her fall, her arm went through a window, the broken glass of which, had inflicted an extensive wound of the arm, immediately above the condyles. This had been followed by great hæmorrhage, and the patient fainted. A tourniquet was applied to the arm, and Mr. Salter was sent for. After having her conveyed home, he proceeded to examine the wound, and found that the humeral artery had been divided. Being prepared with ligatures to tie the vessel, he unscrewed the tourniquet, when, to his astonishment, he found that not a drop of blood flowed. He dressed the arm with a compress of lint, and enjoined on the patient the observance of a low diet and strict regimen. The wound rapidly healed, but at the end of several months, there was discovered a tumour in the situation of it, which, at first, was of small extent, but had increased to a very considerable size. The patient was now four months gone in pregnancy, and therefore he did not think himself justifiable in tying the artery, or performing any operation. He thought that this was a case where compression ought to be employed, and accordingly he applied straps and a bandage to the arm, so as to compress the tumour. This produced the wished for result, and in a short time it was found that the swelling was diminishing, and in the course of some months it had all disappeared, except a very small portion, which afterwards remained. In 1826, this woman became affected with inflammation in the lungs, which terminated in phthisis, and he had had an opportunity of examining her body. He removed a portion of the humeral artery, and also part of the radial and ulnar, and found that the tumour had nearly become obliterated, but that the artery was still pervious.

From the results of this case, Mr. Salter showed the propriety of surgeons occasionally trying, for the cure of aneurism, the plan of compression, which of later years had been so seldom practised.

Mr. TRAVERS observed, that the Society was much indebted to Mr. Salter for his valuable communication.

The Society adjourned at a quarter past ten.

WESTMINSTER MEDICAL SOCIETY.

Saturday, November 24.

HERBERT MAYO, Esq., in the Chair.

AFTER the usual preliminary business of the Society had been transacted, a young Gentleman, Mr. Andrews, previous to entering on the immediate subject of Tetanus, offered some general remarks on the impropriety of his young fellow members being deterred from speaking in a Society, which had been originally intended for their improvement, and which he seemed to consider as a fit place for the practice and acquirement of *elocution*, the want of which, doubtless, many present had, on various occasions, experienced. After enunciating these important observations, which were conveyed with peculiar emphasis, and delivered, certainly, *ore rotundo*, Mr. Andrews proceeded to read a short essay, or rather abstract, of the opinions of authors, on the nature, symptoms, and treatment of tetanus, which however well calculated it might have been to elicit debate, is yet, from its total deficiency in any thing like originality, in nowise suited to the calibre of our readers. The debate, however, which ensued, was one of rather an interesting nature, which therefore, we have much pleasure in reporting.

Dr. SOMERVILLE observed, that nothing was known concerning the real nature of tetanus, and still less was there any reliance to be placed on any kind of treatment. He had had an opportunity of seeing several cases of traumatic tetanus: all of the patients had died, and on dissection, no well-marked morbid appearance was discovered. He recollected one patient whom he had opened after death from tetanus, where he had dissected with great minuteness, even to the smallest fibre, the nerve of the limb, and no morbid appearance was discoverable in it. He had seen one patient who had been under the charge of Dr. Hamilton, (of Edinburgh,) who, God knows, did not fail in administering a sufficient quantity of purgatives, and yet the disease proved fatal; he therefore called on the Chairman for an account of the case of Dr. Thomson's, (alluded to by Mr. Andrews,) where the disease had been cured by the use of cupping in the vicinity of the spinal chord.

Mr. STAFFORD had an opportunity of seeing several cases of tetanus which had occurred in St. Bartholomew's Hospital, under the care of Mr. Abernethy, some of which had been treated by small doses of calomel, combined with other purgatives, and these had recovered. He related several where the disease had been produced after the receipt of various accidents, as of fractures, wounds, and dislocations, and could not, therefore, agree with Dr. Somerville, in his opinion as to the uniform fatal result of the disease.

Mr. CHINNOCK's experience was also opposed to the opinions of Dr. Somerville, and in confirmation of Mr. Stafford's sentiments, he related a detailed account of a child of ten months old, who was attacked with the disease to a violent degree. He had been sent for suddenly one evening, being informed, that if he did not come quickly that the patient would die of convulsions. He had prescribed a dose of calomel and scammony. On his visit early next morning, he found his patient much improved, and by continuance in the purgative plan, a cure was ultimately effected. He related another case where this treatment had proved successful. He thought that purgatives ought, in every instance, to be given, and carried to such an extent as to completely unload the bowels of that foul and fœtid matter with which they were generally loaded. After that had been effected, then he thought opium ought to be given, and then only it would have a beneficial effect.

Mr. LAMBERT considered the division of tetanus into acute and chronic, a good one. He had seen several cases of the disease, he would say as many as twelve. The acute cases, which he considered were well marked by the singular rapidity of the pulse, had all terminated fatally, while several of the chronic had recovered—these had been treated variously. One had got well under the use of the carbonate of iron. He could not agree with the author, when he stated that the wound always became unhealthy previous to the occurrence of the tetanic symptoms. There is at present a patient in St. Thomas's Hospital, where the symptoms occurred sixteen days after the injury, at a time when the wound was healing and had a healthy appearance.

Dr. GREGORY doubted the fact of the child, whose case was related by Mr. Chinnock, being affected with tetanus at all. He was inclined, from the symptoms, to think that it had been labouring under incipient hydrocephalus, and that the child would perhaps yet show more decided hydrocephalic symptoms. He could by no means agree in the propriety of the purgative system. Tetanus he considered to be a nervous disease, and he thought that astringents and *binding* medicines, which would sooth the nervous irritation, were the proper remedies to be employed.

Dr. BARRY observed, that while Mr. Chinnock was considering his reply, he should detain the Society a short time. He would first advert to a statement of the au-

thor of the paper, who considered the Society to be a school for *elocution*. Now, although his paper had been the means of calling forth an animated discussion, yet the younger members ought to recollect, that one of the first rules which Pythagorus enjoined on his disciples was, a seven years silence: he in fact gave them the *locked jaw* for that time. He considered the Gentleman opposite (Mr. Lambert) peculiarly fortunate to have seen so many cases as twelve. He had been at the head of the medical department of an army of twenty thousand men in the Portuguese service, and been with it in the campaigns of 1813-14, when injuries of all kinds had been extremely numerous, and he had not seen so many. In the cases which had come under his notice, he had at first been extremely unsuccessful, he had tried every variety of treatment, and indeed had run through every plan which either experience or imagination could suggest. At length Dr. Fergusson, of Windsor, who was his superior officer, came to his quarters; he conversed with him on the subject of tetanus, and had informed him of his great want of success. Dr. Fergusson inquired whether he had tried alternate doses of carbonate of soda and opium; he said not. Dr. Fergusson then informed him, that it had proved very successful in his hands, and recommended him to employ it in the next case which should offer. He had done so, and declared, upon his honour, that although he had treated several patients immediately after, he had not lost a single patient. He had given the carbonate of soda to the extent of a drachm, in solution, at a dose, and then followed it up by a large dose of laudanum. The manner in which these remedies proved so beneficial, he was induced to think, was owing to the soda dissolving the thick mucus which covered the internal surface of the stomach, and thus allowing the absorption of the opium; and therefore, indeed, it was the opium which produced the cure after all. While in Paris, he had been gratified to hear a lecturer (whose name we do not recollect) recommend the very same plan, which, he said, had been introduced into practice by the Germans. He only, however, recommended a small dose of the carbonate, 20 grs., alleging, that if a larger dose were administered, it might dissolve the coats of the stomach.—After the lecture, Dr. Barry set him right on that point, by telling him of this practice. In the patients whom he had dissected, he had found no disease of any part of the nervous system; but on the contrary, an inflammation of the mucous membrane of the intestinal canal, and more particularly of the small guts. When inflammation of the membranes of the spinal chord was observed after death, he considered it as the result of those violent contortions of the spine, which the convulsive action of the muscles produced, and not as the original disease.

Mr. Mayo had been looking round for Dr. Thomson, to give an account of his own case, where, after the disease had been fully established, its progress had immediately been arrested by cupping in the course of the spine. He considered tetanus to be a disease of the spinal marrow; he would not say inflammation, but some irritation of a peculiar kind. Mr. Mayo related the history of some experiments of Mr. Sewel on the horse, where that gentleman had produced tetanus, which he allowed to *kill* the animal, and then afterwards *brought it to life* by artificial respiration. He passed a panegyric on Mr. Andrews for his excellent paper, and hoped that his example would be followed by the junior members.

Mr. Chinnock observed, that it was now twelve months since he had attended the case alluded to by Dr. Gregory; and although the child had, during that time, been affected with measles and other infantile diseases, yet that no recurrence of the tetanic symptoms had taken place, nor did the patient now show any tendency to hydrocephalus. He had been mistaken in being supposed to support exclusively the *purgative system*, as it was called. He only thought that purgatives ought to be given first, until the bowels were fully unloaded, and then, indeed, opium would be beneficial.

Dr. Webster had seen four cases of tetanus, one of these had been treated by mercury till salivation was produced; two by opiates, and the other by (we think) the warm and cold bath. The one treated by salivation had recovered, the other patients had died. The dissection of their bodies had been conducted by very eminent men in the south of Europe, and no disease of the spinal chord had been detected. The cases had created much interest at the University where he then happened to be, and consequently the examinations had been performed with much minuteness. He thought it right to mention these cases to the Society.

Dr. Shiel observed, that in the south of Europe, where Dr. Webster had been, it was not the custom for medical men to give remedies in any disease, without accounting for the manner in which they were to act. He would be glad to have some information on the subject of the action of the remedies proposed. He recollected a case which had occurred in Edinburgh of traumatic tetanus, which, as it was a subject of notoriety, he would mention the lady's name, Mrs. M'Cormach, where Dr. Gregory had given wine glassfuls of laudanum for a

dose; the patient, however, died. Dr. Shiel passed a high eulogium on Dr. Barry, for his very able and useful remarks and observations, which were certainly of the greatest value.

Mr. Bennett knew also of the case of Mrs. M'Cormach, and he considered it to have been one of arachnitis, a disease which was frequently mistaken for tetanus. The great distinction between the two was in the state of the muscles after the convulsions had ceased. In tetanus they remained hard and rigid, while in arachnitis they became soft and flaccid. There was this difference between medical men on the Continent and in this country, that abroad they never administered a remedy without knowing how it should act; whereas here, when the usual means had failed, then we gave medicine empirically. Now he confessed that he considered the system followed in this country to be the better.

After some mutual complimenting by Mr. Mayo and Mr. Andrews, which we must be excused from reporting, it was announced from the chair, that the next meeting would be devoted to promiscuous business, i. e. the discussion of any cases which the members might be pleased to bring forward, and the consideration of some obstinate cases of stricture, which had occurred to Mr. Stafford, in which he had employed a new instrument for their cure. The Society then adjourned.

LONDON MEDICAL SOCIETY.

Monday, November 26.

Dr. Haslam, President, in the Chair.

The minutes of the last evening having been read, Dr. Blick rose to complain of the "*irregularity*" of the proceedings. He thought that he had been unfairly dealt with, inasmuch as the president had allowed a debate to go on, upon the assumption of his having made certain observations, which he (Dr. Blick) had not made.

The President said, that it could scarcely be expected he should point out to the Society the precise line of argument to be adopted in the discussion of any subject; it was at all times open for Dr. Blick to show, that he had or had not made use of certain assertions.

We understood Dr. B. to allude to the circumstance of its having been argued that he could not introduce the catheter into the *trachea* of the child; whereas, as it was observed in a former Number, we simply stated that it was introduced into the *mouth* of the child, and that by this means he inflated the lungs, when the child's head was in the vagina.

Dr. Blick went over his former ground, reiterating his previous opinions with respect to the placenta being in general *detached* at the time of the expulsion of the fœtus, and cited the authority of Dr. Hamilton, as confirmatory of this opinion.

In fact, the gist or pith of Dr. Blick's argument was, that the uterus, *as a matter of necessity*, in contracting to expel the child, by the same process altering the commensurate surfaces, *detached* the placenta; and therefore such being the case, no circulation went on through the chord after the birth of the child, and consequently there was no pulsation, truly speaking, at that time in the funis. The *supposed* physical incompatibility of the general or respiratory and the fœtal circulation being simultaneously carried on, was a circumstance also on which Dr. B. grounded his assertion of the non-pulsation of the chord, after the body of the child had been expelled.

With respect to the placenta being *detached* by those very efforts necessary to expel the fœtus, Dr. B. admitted that he delivered the placenta with the first or second pain after the birth of the child: thus allowing that some further action than that attendant upon the expulsion of the fœtus was necessary to get entirely rid of the placenta. Dr. Blick also said, that he had been informed by Dr. Barry, that French accoucheurs do not tie that portion of the funis connected with the mother. Mr. Waller observed, it was well known that the upper ligature is applied to the funis only for the sake of cleanliness, that is to say, merely to prevent the placenta from pouring out its contents; but if *no* ligature were used to that portion of the chord connected with the child, fatal hæmorrhage would ensue.

Upon this subject, Dr. Stuart made a very pertinent observation, in the form of a question, namely, whether the heart of the fœtus is not the active agent of circulation, exerting a forcing and sucking power as in the adult? And hence, Dr. S. further asked, might not the placenta be detached, and yet circulation be carried on? A conversation then followed on the fœtal circulation, in which Mr. Langstaff bore a considerable share: he said that he had, by means of very minute injections from the arteries of the mother, succeeded in tinging the fœtal surface of the placenta; but, in common with other anatomists, had failed in tracing a direct communication.

All the speakers strongly contended for the fact of the chord actually pulsating after the birth of the child, and when the placenta

is still in the uterus. Dr. Blick by no means gave a satisfactory explanation of a fact cognizable to every man's senses; asking whether it was not a "peculiar elasticity in the chord which gave the feel of pulsation?" or whether it might not be a vibration resulting from the sudden separation of the placenta! With respect to the expulsion of the placenta, Dr. Blick said, that in 1700 cases of midwifery which he had attended, he had only met with two or three instances in which it had not come away very shortly after delivery of the child—*he always assisted its expulsion, by making extension at the funis.*

Mr. Lliff remarked, that such was the usual practice; Dr. W. Hunter and others, however, seeing the mischief which in some instances resulted from taking away the placenta, determined to wait till nature expelled it: the consequences of this practice were found so alarming, that it was abandoned. This very fact, he thought, militated strongly against Dr. Blick's assumption of the placenta being detached at the birth of the child. He had notes of 400 midwifery cases from a surgeon-accoucheur, now dead: this gentleman was in the habit of waiting for the placenta to be detached by the natural efforts, and the result of his practice was as follows: with *one* case only in 400, it passed at the instant the child did; that in 382, it passed within half an hour; with 16, between this time and an hour, and in one case only required extraction, which was done at the expiration of an hour and half. Only one of these cases proved fatal.

Dr. Blick thought, that the erroneous views generally entertained with respect to the placenta not being *detached* at the time of the birth of the child, gave rise to a line of practice; namely, waiting for its expulsion by the simple efforts of the uterus, which in his estimation was the source of the numerous cases of morbid adhesions of the placenta, reported by authors. And therefore it was a practical point worthy of deep consideration. The *possibility* of applying the forceps, in Dr. Blick's case, having been denied, (in reference to our report) by a public lecturer, Dr. B. produced Smellie's 35th folio Plate, which is a representation of the forceps applied to the head in a footling presentation: the head even remaining above the pubes.

And here we sincerely hope this discussion has ended; for although we agree with one of the speakers that practical points should be "thoroughly sifted;" it can scarcely be thought to be one of those efforts, of which we can say, "decies repetita placebit."

ENGLISH AND SCOTCH PHYSICIANS IN FRANCE.

To the Editor of The Lancet.

Boulogne sur Mer, Nov. 20, 1827.

Sir,—The annexed letter was addressed to the Editor of *The Morning Herald* by Dr. Robertson on Saturday last; and as it is the only way he will condescend to notice Dr. Allatt's publication, the insertion of the letter, with this, in the next Number of The Lancet will much oblige Dr. Robertson. As the advertisement alluded to closes with a short Latin sentence, Dr. Robertson cannot omit this opportunity of following so polite an example, and accordingly subjoins two characteristic sentences:—

"————————Ille flagellis
casus:————————
————————iniquæ mentis asellus."

To the Editor of The Morning Herald.

Sir,—By an advertisement in your Paper of the 15th instant, I am charged by Dr. Allatt of having suppressed a letter in the publication of my correspondence with him. In noticing the circumstance, I can only refer your readers for a contradiction of his gross (and shameless) assertion to the letters in *The Gazette of Health*, Nov. 1, and in The Lancet, Nov. 3, which also afford sufficient grounds for me to decline any discussion with that person. In justice to me, I cannot doubt you will give an early place to this in your columns, and oblige

Your obedient humble servant,

Boulogne sur Mer, Nov. 15, 1827. H. Robertson.

MIDDLESEX LUNATIC ASYLUM.

"Yesterday the Committee of Magistrates, appointed at the recent general meeting of the magistracy of the county, to superintend the erection of an Asylum for the reception of pauper lunatics, held their first meeting at the Sessions House, Clerkenwell. Mr. Const, the chairman of the sessions, presided on the occasion. The meeting being a private one, we are only enabled to state that the committee resolved to advertise forthwith for a suitable piece of ground whereon to erect the building, of not less than 25 acres in extent, and in a healthy situation, near the metropolis, and where there is a plentiful supply of good water. They also will, by the same means, apply for plans, elevations, and an estimate of expenses of buildings, for the laudable purpose. We are sure our readers will rejoice, that active measures have commenced for the purpose of relieving, as far as may be, the sufferings of our fellow-creatures who may be afflicted with the worst of all of human maladies."—*From The Times of Thursday last,*

GUY'S HOSPITAL.

CASE OF DIFFUSE INFLAMMATION OF THE CELLULAR TISSUE OF THE ARM.—ERYSIPELAS PHLEGMONODES.

Amongst the diversity of opinion which at the present time agitates the medical world, with respect to the proper treatment of diffuse inflammation of the cellular tissue, or in other words, erysipelas phlegmonodes, we humbly conceive that *facts* of the following nature will be read with interest and attention. For, as Mr. Lawrence truly remarked in his admirable speech on this subject—"it is a question of experience." We may, however, say thus much generally, that it is not the practice in these Hospitals, under any circumstances, to make incisions into the inflamed parts, by way of preventing suppuration.

An emaciated unhealthy-looking Irishman, about 30 years of age, was admitted into the Hospital on the 31st of October, under the care of Mr. Morgan. The fore and upper arm, to about six inches above and below the elbow joint, were much swollen, œdematous, and of a dark red colour: the upper-arm was less swollen and less red than the fore-arm. There was a small wound at the back of the elbow, discharging an ill-conditioned pus; the man had cough, with a very feeble pulse; his tongue was moist, and bowels lax. The account which he gave of the origin and progress of the disease was that the arm first became swollen, about three weeks prior to admission, and that two small red patches soon afterwards appeared on the fore-arm: that the redness gradually increased, until the parts became affected to the extent described above. The skin, he said, had given way at the elbow, about a week before he came to the Hospital; and he had no medical assistance. He complained greatly of want of rest, occasioned by throbbing pains in his arm. Mr. Morgan observed, on visiting the patient, that it was a well-marked case of erysipelas phlegmonodes, which had proceeded to partial suppuration. He pointed out also the cachectic condition of the patient, as a circumstance contra-indicative of the practice of making extensive incisions, either when the parts were in a state of inflammation simply, in which case a *very* large portion of blood would be lost, or at the present time, when suppuration had gone on, when perhaps less hæmorrhage would ensue, but too much for the condition of the patient.

A probe was passed from the wound at the back of the elbow, and it was found that there was a sinus extending some way down the arm; this, Mr. Morgan laid open by means of a bistoury. A few punctures were made, by means of a lancet, in the fore-arm, with a view of evacuating the serum from the engorged cellular membrane. Fomentations were directed to be frequently applied to the arm, wrapping the whole limb in flannel subsequently. *Two grains of the sulphate of quinine* to be taken in infusion of roses, three times a day.* Five grains of the extract of henbane, three times a day. Half a pint of wine, in twenty-four hours, with a generous diet.

November 1st. A report made to day, states that the patient had a better night than for some time past; the swelling and redness had materially diminished. The cough is less troublesome, and the patient is free from the febrile symptoms; the pulse is very feeble. Ordered a pint of porter daily, in addition to the wine. Continue the quinine and henbane, and the use of the fomentations.

3d. Still improving, another sinus was discovered yesterday, extending from the elbow some way down the arm; a counter opening was made, and a considerable portion of ill-conditioned pus evacuated. The discharge from the former opening is thin and unhealthy; much serum escaped from the punctures. The pulse is still feeble. Ordered an additional pint of porter daily. (We understand from the patient to-day, that he has been in the habit of drinking several quarts of porter daily.)

6. The swelling and redness have gradually subsided since the last report. The same means are pursued.

10. There is still a discharge of thin matter from the openings, with some swelling of the limb, but the redness is gone. A roller bandage is now applied round the limb.

From this period nothing material occurred, the parts gradually got well; but the patient remained for some time in a very weak condition.

---

* The French, who in general reason thus—here is inflammation, *ergo*, we must adopt antiphlogistic measures—think it inexplicable that we should employ *tonics* in cases of inflammation, although it may evidently be an *effect*, in a depraved habit of body. Magendie, when in this country, we know expressed much surprise at a case of erysipelas under the care of Dr. Elliotson, in which sulphate of quinine was given. If we mistake not, he alludes to it in the last edition of his Formulary.

ST. THOMAS'S HOSPITAL.

MR. GREEN'S CLINICAL REMARKS ON WOUNDS OF ARTERIES.—APPLICATION OF THE ACTUAL CAUTERY.

In a former Number of this Journal was reported a case of wound of the radial artery, near to the wrist, treated by Mr. Green, with the application of two ligatures, and division of the vessel in the interspace. Mr. Green, on Saturday last, made some clinical remarks on this case, and on the treatment of wounded arteries generally. It is unnecessary here to recapitulate fully the particulars of the case—its leading features were as follow:—the wound had been inflicted a week previously to the operation of tying the vessel, repeated bleedings had occurred, and there was considerable inflammation about the wound, and tumefaction of the soft parts generally: the treatment was as enumerated above, with the subsequent use of cold lotions to the hand and due attention to position. The ligatures separated on the tenth day, and the patient was completely cured.

With respect to the particular circumstances immediately connected with the operation of tying the artery, Mr. Green observed that the lower ligature was of necessity applied so near to the *superficial volar* branch, that it became a question whether it would not be proper to apply the ligature below this branch, and then to secure it. However, this practice was not adopted, as Mr. Green did not consider that the current of blood through the volar branch, was of sufficient magnitude to disturb the proper results of a ligature. But "as a general rule," said Mr. Green, a ligature should not be applied upon an artery, near to the divergence of a large branch. Another point considered worthy of remark in the operation was the occurrence of profuse venous hæmorrhage, which Mr. Green had also particularly remarked in a case that he had lately seen of a deep wound of the thumb, where it was necessary to cut down upon and tie the bleeding vessel. He attributed the venous hæmorrhage to the obstruction of the return of blood occasioned by the tourniquet, which was applied in both instances. It was also to be taken into account, that in each case the parts were in a state of inflammation at the time of the operation.

From the detail of the case, Mr. Green proceeded to lay down some general rules for the treatment of wounded arteries. He said that in all cases where it was possible, two ligatures should be applied, the one above and the other below the wound; that there were no circumstances in which a patient could be fairly said to be in a safe condition, without the application of two ligatures, so great was the risk of hæmorrhage from anastomosis. To illustrate this remark, Mr. Green adduced the case of a carman who was struck down, and falling upon the railway of a cart, received a punctured wound at the upper part of the leg, between the tibia and fibula. Arterial hæmorrhage ensued, and recurred so forcibly and frequently, that it was thought proper to tie the femoral artery at the middle of the thigh; this, however, proved inadequate, for the bleeding recurred again and again from the wound, until at length it was necessary to amputate the limb. It was found upon subsequent examination of the part, that the anterior tibial artery was wounded near to its origin.

There were cases, however, said Mr. Green, in which, from peculiarity of situation, it was impossible to apply two ligatures. In deep wounds in the palm of the hand, and of the sole of the foot, where there was danger of inflammation in making free incisions, then compresses might be resorted to, but the pressure should be applied regularly.*

Mr. Green here mentioned a case of a deep wound at the inner edge of the ball of the thumb, in which, notwithstanding a compress and bandage had been applied, hæmorrhage continued unabated. In this case the bandage and compress being removed, the hand and arm placed on an inclined plane, and kept wet with evaporating lotion, whilst a piece of simple dressing only was applied to the wound: under these means the bleeding ceased. Mr. Green supposed that in this instance the irregular pressure had excited the action of the heart and arteries.

As an instance of the occasional efficiency of regular pressure in wounds, even of large arteries, Mr. Green related a case in which a young gentleman at Harrow school was wounded with an oyster-shell behind the ascending plate of the lower jaw. It was

---

* A case which lately occurred at Camberwell, in the practice of Mr. Callaway, particularly illustrates the difficulty of treating hæmorrhage from deep wounds of the palm. The ulnar and radial artery, were successively tied in this case, but without the effect of staying bleeding from a deep wound in the palm; at length, as a dernier resort, an incision was made at the wound, when the bleeding ceased, probably from the wounded vessel being completely severed, and consequently its extremities retracting.

found to extend through the parotid gland, and to have wounded the external carotid artery; a compress was applied, but it was not sufficient to restrain the hæmorrhage, Mr. Cline, senior, who saw the patient at this juncture, cleared away the coagula from the wound, which was very deep, and inserted therein a piece of dry sponge, applying over this, graduated compresses of lint and a bandage. Under this treatment the case was successful.

The application of the *actual cautery*, Mr. Green remarked, was a most effectual, but certainly neglected, means of restraining hæmorrhage. It was however not to be applied after the manner of the ancients, so as to sear and fry the part and produce an eschar, but with a view of exciting adhesive inflammation. From some experiments instituted by Mr. H. Cline, on animals, he found that adhesive inflammation was set up in the course of two hours. The iron should not be used when red hot, or of a white heat, but rather when of a *black heat*, that is to say, after it has been heated and is just cooling. Mr. Cline employed it in this state with signal success, in a case of hæmorrhage, after amputation of the leg; he cleared away the coagula, tracing the sinus from which the blood proceeded, but was not enabled satisfactorily to see the orifice of the bleeding vessel. A piece of wire, bent at right angles, was made of the *black heat* described, and being shielded by a canula, was in this state passed down the sinus, the point touching the part only from which the blood proceeded: the bleeding by this means was restrained, and the patient ultimately got well.

MORBID ANATOMY.—FUNGOID DISEASE OF THE BLADDER.

In a clinical lecture delivered on the 3d November, Dr. Elliotson showed the pupils a very interesting example of fungoid disease of the mucous membrane of the bladder.

The patient, a middle-aged man, was admitted into the Hospital a few weeks since, and represented that he had been ill for several months, voiding a large quantity of blood with his urine, and having great pain in his loins. He passed a full quantity of urine without the least irritation; he had no pain about the neck of the bladder, penis, testes, or thighs—no tenesmus, nothing in fact, besides the bloody state of the urine, and pain in the loins. He said that he received a severe blow on the loins five years previously, and for some time after passed large quantities of red gravel in his urine.

The pulse being quick and strong, Dr. Elliotson directed cupping on the loins, which was done twice, freely, and cold lotions were ordered to be kept constantly applied to the loins; the bowels were regularly acted upon by aperient medicines; still the urine contained large quantities of blood, and the pain in the loins was but slightly diminished. He went on in this condition for some time, when suddenly he became violently delirious, and had great pain in the head; the pulse at this time was full and strong. He was instantly cupped on the occiput, cold lotion applied, and mercury exhibited: the cupping was subsequently repeated, blisters were applied to the back of the neck and to the forehead, and the mercury given to ptyalism. It is important to remark, that as soon as the mouth became sore, the delirium was lessened considerably. As there was no redness of the eyes or face, and the pain in the head was gone, it was thought advisable to administer opium, in doses of two grains, night and morning; sleep was procured by this means, and the delirium was entirely subdued. Still the bloody condition of the urine remained the same—in fact the hæmorrhage rather increased, until at length great prostration of strength ensued, the tongue became brown, the pulse lost its fulness, and ultimately the man sunk. The oil of turpentine was exhibited for some time, but with no benefit. The kidneys and the whole of the urinary apparatus were quite healthy, with the exception of a spot on the bladder on the left side, which exhibited the appearances characteristic of true fungoid or medullary disease. We may take Dr. Elliotson's description given to the class, as it affords a clear and concise statement of the condition of the part. Over, and indeed half round, the orifice of the left ureter, there is to be seen an extraneous substance, which upon close inspection appears to be a mass formed by the prolongation of the mucous membrane; smooth for about one-third of an inch, and then rugged, split with innumerable fringe-like portions, on which are minute tubercular prominences. Among all these was a quantity of cerebral substance, white, with minute reddish points, and very soft, indeed pultaceous; so that on opening the bladder, the whole presented a mass of the size of a small walnut. This had bled profusely, and of this hæmorrhage the man had died.

Dr. Elliotson remarked, that the disease in question was a well marked example of what Hey and Burns call fungus hæmatodes; Bell, soft cancer; Abernethy, medullary sarcoma; the French, encephaloid tumour. Mr. Abernethy had been censured for using the term *medullary sarcoma*, as it was said that one structure could not be at the same time, *marrow* and *muscle*. But *sarcocele* was an established name for certain enlargements of the testicle, though the testis is not muscular, and an abdominal viscus not

muscular; but a gland is called *pan-creas*. For these reasons, he (Dr. Elliotson) thought the term, medullary sarcoma, was allowable. With respect to the case under consideration, Dr. Elliotson observed, that as the tumour was so situated that it prevented neither the ingress nor egress of urine to or from the bladder, it caused no disturbance even of function. The patient died of hæmorrhage alone, as his general health was not impaired except from the loss of blood. Dr. Baillie, he said, did not mention this disease of the bladder, but gives a plate of what he calls a fibrous tumour in precisely the same situation, on the same side, and of the same size, as in this instance. Mr. Howship and Mr. Wardrop had mentioned cases of this kind, and as attended by pain and irritation. In the two mentioned by Mr. Howship, the suffering was dreadful, but the mass of disease was very great.

MORBID ANATOMY.—REMARKABLE DISEASE OF THE HEART.

Dr. Elliotson, in a clinical lecture delivered on the 10th of November, exhibited to the class a specimen of diseased heart of a very singular nature. In the first place, the pericardium was so coherent that there was in fact no pericardial cavity—here and there small portions of cartilage were seen upon the membrane. The semilunar valves of the aorta, the *mitral* and the *tricuspid* valves, were all as much diseased as was compatible with existence. The aortic valves were so much thickened, that they stood and distended as they appear only when stuffed with wool in a preparation: the opening left through the valves was only about equal to the calibre of a large goose-quill. The *mitral* valve was still more thickened, being in truth converted into a solid cartilaginous mass, with a narrow longitudinal opening—a mere slit in the centre. The *tricuspid* valve was greatly thickened, and only a small opening of about the size of a silver penny left in its centre, and apparently like the bicuspid was totally inefficient as a valve to prevent the retrogression of the blood. The whole of the lining membrane of the heart was thickened, and the valves of the pulmonary artery in a thickened and diseased state; and although not so extensively affected as the other valves, were evidently fast approaching to the same condition. The cavity behind each of the diseased valves was greatly increased—the *left ventricle* behind the aortic, the *left auricle* behind the mitral, and the right auricle behind the tricuspid. If any thing, there was an increase of muscularity to be observed, especially in the auricles; so that the thickness remaining the same, and the dilatation existing at the same time, there was really a great addition of substance—a *true hypertrophy*.

That the obstruction was clearly the cause of the dilatation was manifest, from there being no dilatation in the right ventricle, where the opening into the pulmonary artery was comparatively free; and, as Dr. Elliotson remarked, the origin of the disease was probably inflammatory, as the pericardium was so firmly coherent. The patient had suffered fifteen years previously from a very severe attack of rheumatism, and had frequently been affected with the same disease in a less degree. He was a shoemaker, was admitted into the hospital on Thursday, November 1st, and died on the following Monday—an interval of five days. He said that he had been unwell only five months; his face was thin and sallow; his legs and abdomen dropsical; the respiration was short and hurried, but he could take a deep inspiration without pain. He could walk about, but had such a tendency to syncope under the slightest exertion, that he was soon compelled to sit down: he had slight cough. It was not without great difficulty that the pulse at the wrist, or the action of the heart, was discovered; both were as faint as in a dying person; but on applying the stethoscope, although the impulse of the heart was scarcely perceptible, there was heard a loud noise over the fore part of the left ribs and their cartilages, and indeed all over the sternum, resembling the sound of a bellows in action—*bruit de soufflet*. It was heard at the moment of the contraction of the ventricles, and, of course, of the pulse.

As the patient complained of want of rest, Dr. Elliotson prescribed, on the day of admission, a dose of opium, to be taken at night, and half a drachm of the wine of colchicum three times a day. On the Saturday (the man having been admitted on Thursday previously) we saw him, in company with Dr. Elliotson; he was then lying in bed, on his back, with his head raised: he said that he had been freely purged, and was much easier; probably, as Dr. E. remarked, from the congestion which must have been present in all the abdominal veins, being lessened by the purging. However, subsequently to this, the dyspnœa became more and more urgent, and the man sunk, as we have before stated, on the fifth day.

Dr. Elliotson, in his clinical lecture, wherein he accurately pointed out the morbid appearances observable in the heart, remarked, that the smallness of the pulse undoubtedly arose from the circumstance of a small quantity of blood only being propelled into the aorta at each pulsation—the contraction of the aortic opening always having this effect. But he stated further,

that the contraction of the left auriculo-ventricular opening produced the same effect, as in this case so little blood can enter the ventricle, although it may be that it can freely escape.

The small quantity of blood which entered the ventricles in the present case, he said, explained why the action of the heart could scarcely be felt. For this also there was another cause, namely, the dilatation of the left ventricle: for whenever a cavity of the heart is dilated, the impulse is proportionally diminished.

With respect to the peculiar sound heard through the stethoscope, Dr. E. said it was produced by the obstruction of the aortic valves; for if an opening of the heart is narrow, this peculiar noise is heard: but sometimes they are narrowed from temporary causes, as spasm, and therefore the sound does not prove the existence of structural disease. However, that when the noise is permanent, and combined with other symptoms of organic disease, then we may fairly infer, that the opening is lessened from structural change. If the contraction be at the openings from the ventricles, then the sound is heard at the ventricular action: if at those from the auricles, then it is heard at their contraction. In the case under consideration, the peculiar sound, as far as could be judged, arose during the action of the ventricles, and perhaps was heard all over the heart, from the great dilatation of the left ventricle; but as the heart beat very rapidly, and there was no interval after the ventricular action, it was difficult to say when the noise occurred. But Dr. Elliotson on this point further remarked, that he had been told, the enlargement of an orifice, or the inadequacy of a valve to do its duty, had the same effect—the blood regurgitating at each action into the cavity it had left. If this were really the case, there was probably a second reason for the noise, as the tricuspid valve was unable to prevent regurgitation; and it also accounted for why the sound was loudest in the situation of the right ventricle.

The lungs in this case were of a dark red colour, heavy and solid, and discharged from every part, on pressure, a large quantity of frothy fluid.

TO CORRESPONDENTS.

Communications have been received from Mr. MEREDITH—Mr. SEWARD—Mr. HORTON—Dr. EDWARDS—Dr. FERGUSON—Mr. SHEPHERD—Mr. THRELFALL—Mr. CURTIS (two papers)—Mr. GERVIS, junior—Mr. DEWHURST—AN OLD SUBSCRIBER—X. Y. Z.—AN INHABITANT OF EXETER—J. R.—FRATRES WESTMONASTERIENSES—F. P. (with the C. H.)—F. G. L.—A BARTHOLOMEW STUDENT—D. (with the paper on the Man of Knowledge)—A DRESSER—INTERROGATOR—J. Z.—AN OCCASIONAL CONTRIBUTOR—I. P. G.—A STUDENT—A SURGEON-APOTHECARY. Several of these papers will be published at an early period.

S. C. E. suggests that a subscription for Mr. Cooke should be opened in Bristol; but we fear that the proposal has come too late.

The Archbishop of Canterbury *has not* the power of granting medical degrees.

Lectures of the description alluded to by a "NON-MEDICAL READER," will be published on a future occasion, but the period is rather distant.

Dr. M'KEEVER's paper on uterine hæmorrhage and Dr. ALEXANDER's case of "intermitting paraplegia," shall appear as soon as possible,—probably in our next Number.

We should feel obliged if "C. D." and the author of the paper on the *jon*, concocted for the "Resident Secretary and Actuary," would confidentially favour us with their names.

We have held no communication with Mr. GUTHRIE, either directly or indirectly, and consequently have had no interview with him. The report in question is an infamous calumny.

Literary Announcements in our next.

IN the List of Mr. Cooke's Subscribers, in our last Number, the following names were omitted:—

	£.	s.	d.
A. Fletcher, Esq. King's Road, Chelsea..	1	1	0
Leicester Subscription:—			
Dr. Arnold	1	1	0
Dr. Freer	1	1	0
Mr. Macauley, Surgeon	0	5	0
Mr. Highton	0	10	6
Mr. Paget	1	1	0
Mr. Broughton	0	2	6
Mr. Nedham	1	1	0
Mr. Down	1	1	0
Mr. Wilkinson	1	1	0
Mr. T. Paget	1	1	0
Mr. Freer	1	1	0
Dr. Hill	1	1	0
Mr. Oliver	0	10	6
Mr. Fowler	0	10	6
Mr. Gosset	1	1	0
Mr. Jump	0	5	0
Mr. Stallard	0	10	6
Mr. Denton	0	10	6
Mr. Harris	0	10	6
Mr. Bloomar	0	10	6
Mr. Blunt, Wigston	1	0	0
Mr. Bowman, ditto	0	10	6
B.	0	10	6
Mr. Foubroke, Loughbro'	0	10	0
Mr. Wallis ditto	0	10	0
Dr. Peach ditto	1	1	0
Mr. Eddowes ditto	1	1	0
Mr. H. Eddowes ditto	1	1	0
Mr. Palmer ditto	0	5	0
Mr Jones, Lutterworth	1	0	0
Mr. Birdsall, Syston	0	10	6
A Friend to the Profession	0	10	0
Mr Parsons, Architect	0	10	0
Mr. T. Combe, Bookseller	0	2	6
Mr. Bartrum, Chemist	0	5	0